

The future of interactive entertainment

UK edition March 1996 £3.50

EDGE

Sony ■ Sega ■ Nintendo ■ 3DO ■ PC ■ Amiga ■ Atari ■ SNK ■ Arcade ■ NEC ■ CD-i

EDGE 50 Power Players

The movers and shakers that rock the videogames industry

issue thirty

30





The changing face of videogames

Since **Edge** was launched back in the summer of 1993, the interactive entertainment industry has changed beyond recognition. Issue one saw a broad selection of games showcased – all were 16bit with the exception of two – a brace of 8bit, yes, 8bit PC Engine titles. Now, over two years later, 32bit is the standard-bearer with the ominous hammering of 64bit almost audible to those with their ears pressed to the door.

The hasty transition to new technology has claimed its victims, though. In the past two and a half years **Edge** has seen 3DO rise phoenix-like above its rivals, only to stall and flutter around in a pile of its own dodo feathers. With M2 being dangled carrot-like in front of 3DO owners it almost begs the question – what happened to the 32bit revolution that was promised? Atari meanwhile failed to even make a ripple in the post 16bit waters with its inept management almost relegating its Jaguar system to the point of extinction. So far at least, in gauging who the short-term winners and losers would be, **Edge** has got it exactly right.

Editorially, the magazine has strived to reflect the positive and negative aspects of all videogame technology, never afraid to put the boot in. Of course, videogame consoles are just one part of the flourishing interactive entertainment agenda, and to reflect such diversity the magazine will be changing, too. Over the coming months **Edge** will be broadening its horizons and casting an even wider net over the interactive entertainment industry. Thanks for your support. Stay on the edge during 1996…

The **future** is almost here…

Voted Magazine of the year
Industry awards

Future Publishing

ABC (Audit Bureau of Circulation)

Printed in the UK

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Somerset TA11 7BR
Tel Customer services:
01225 822510
Customer order line:
01225 822511
Fax 01458 274378
The annual subscription rate for one year is:
UK £36 (£32 direct debit), post free;
Europe £63; rest of world £92
Overseas distribution:
Future Publishing 1225 442244

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Colour reproduction

Colourworks Repro, Bristol
Phoenix Repro, Bath

Print

Cradley Print, Warley, West Midlands
Edge is printed on Royal Press 90 gsm

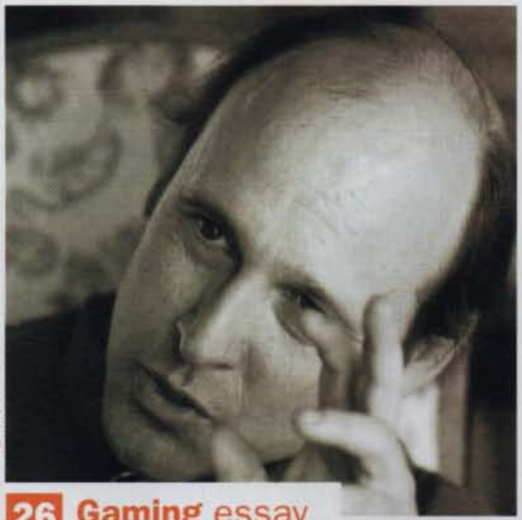
Production of Edge

Hardware: Power Macintosh, PowerBook, IIsi and Classic by Apple
Software: *QuarkXPress*, Adobe *Photoshop*, Aldus *FreeHand*, Pixar *Typestry* and *Nisus*
Typography: (Adobe®)
ITC Franklin Gothic/**Heavy**
Bell Gothic Light/**Black**
Gill Sans/**Bold**
Fifth colour: Pantone® 8002 & 877

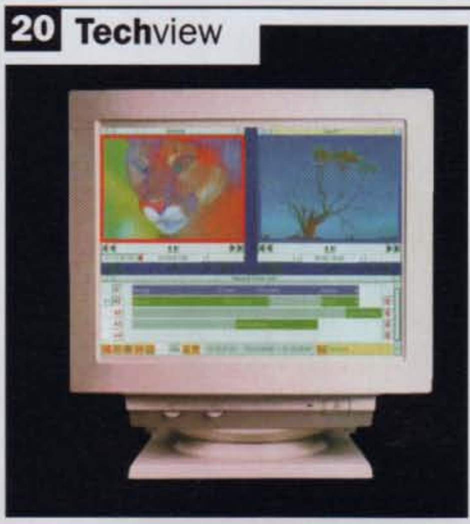
Cover

Cover image: '**Edge** Top 50 power players' designed by Jez Bridgeman

Thanks to Zuby



Photography: Mark Koehler















Photography: Jude Edginton

EDGE 50 Power Players

insideview

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Photography: Jude Edginton





Sega's Japanese HQ (left), Bandai's Pippin power player (top right), ***Air Combat*** (above)

Prescreen 30





Time Commando (left) and ***F1***

Testscreen 66

Toshinden 2 (left) and ***Total NBA***





96 Jeremy **Smith**



Photography: Martin Burton

Sega reported to be **considering** M2 hardware/**page 6** • **PowerVR** – the PC 3D race **hots** up/**page 8** • **Pippin**, the console with a **Mac** for a brain, emerges /**page 10** • **Nintendo** put on some **bulk**/**page 11** • **Atari** sinking fast/**page 12** • Big guns agree on a DVD format/**page 13**



The latest **news** from the world of interactive entertainment

Matsushita hawks **M2**, **Sega** edges closer

The Sega/M2 rumour-mill climaxes into news of a hardware deal

The persistent rumour that Sega is considering supporting Matsushita's M2 technology continues to gather pace and authenticity. A recent Japanese newspaper, the Yomiuri Shimbun, ran a story suggesting Sega was close to pulling out of the consumer hardware race to rely instead on 3DO's M2 chipset recently secured by Matsushita. The following day in the same organ, a Japanese spokesperson vehemently denied the accusation.

This development is the furthest the matter has reached in the public eye – initially surfacing when The 3DO Company was hawking its technology to both Sega and Matsushita – and lends credence to the rumours that have been snowballing for six months. Unlike the scheming and caustic nature of the UK press, Japanese hacks are notoriously reticent about unearthing scoops. Such reporting does occur but usually only when enough evidence exists to prevent the party concerned from taking legal action.

Sega's interest in the technology developed by Trip Hawkins' Californian R&D team can been seen on several levels. First, there is the likelihood that the company has had its fingers burnt once too often with expensive, unprofitable console hardware. The costly and troubled development of Saturn follows the 32X and Mega CD in a catalogue of potent but over-priced hardware that has possibly caused Sega to reevaluate its business →





A deal between Sega Enterprises (HQ, above) and the world's biggest consumer electronics company would give M2 much-needed credibility



Matsushita has a mammoth 40 RPGs destined for development on M2 as well as its flagship title, Warp's stunning *D2* (above)

→ practices. While its Saturn has done extremely well in Japan, the development of a successor (originally assigned to US defence contractors Lockheed Martin, until M2 surfaced – see **E**25) will be one challenge that Sega could be keen to dodge.

By becoming an M2 hardware licensee, Sega could well find a solution to its most taxing problem. It's well known that in the arcades the company has been facing difficulties during the development of its high-end Model 3 board (also the responsibility of Lockheed Martin) which, while now

Open to speculation are the form Sega's M2 box would take and the compatibility of the new machine with current Saturn technology

complete, was so delayed that senior Sega executives were apparently readying to sue. The awesome rendering power of the M2 chipset could effectively provide Sega with a technology that will span across both its consumer and arcade interests.

Second, following a trend that continues in the industry, Sega realises its future profits lie in software, not hardware. The incredibly competitive nature of the next generation hardware race has all but eradicated the profits that can be made on selling consoles into homes – hence the efforts by many Japanese games companies to expand their publishing horizons. If the company can concentrate on developing M2 software between now and the launch without the co-development of hardware holding it back (as was the case with Saturn) then it has a far better chance of succeeding. And the value of having Sega aboard its M2 bandwagon must seem an unmissable opportunity for Matsushita, who faces the formidable task of preparing worthy software for M2 in the wake of its own part-funded and slowly sinking 3DO platform.



With the M2 bandwagon gathering speed, 3DO M1 support is waning, as Goldstar's recent decision to stop manufacturing its GDO 202P (above) attests

Ultimately, Sega's consideration of M2 must also hinge upon the political nature of the Japanese electronics industry. Matsushita is planning to introduce its first gamebox in Japan this December and already industry spectators are talking of the potential for an industry standard to be structured around the technology belonging to the world's largest electronics company. Certainly, with M2 now firmly embedded in Japanese soil, Matsushita will have considerably more leverage over its Japanese brethren than its American colleagues at 3DO ever had. There now exists every possibility of a swell gathering behind M2 in Japan that could eventually mean the format adopting far greater authenticity as a 'standard' within the consumer electronics world.

In return for cash, resources and hardware support, Matsushita is now selling M2 in a similar fashion to how Trip Hawkins took on the global consumer electronics industry in the early 1990s. The difference here is that being a Japanese company, Matsushita could have a better chance of making it happen. As industry trade paper CTW, suggests, 'the initial power base of Japanese companies that made VHS a global standard may have made a gentlemen's agreement with Matsushita to bring M2 machines to market possibly by the end of this year.' As **Edge** went to press, Japanese Matsushita executives were attending meetings in the UK to set a framework in place for third party software support, marketing and pricing. It could well happen sooner than people think.

Open to speculation are two matters – the form Sega's M2 box would take and the compatibility of the new machine with current Saturn technology. Sega has recently taken delivery of an M2 development system, meaning the only obstacle blocking the deal is the company's poor relationship with Matsushita itself, due to animosity created over the fight for the rights to M2 last year. If a deal does emerge, the Japanese arcade company will ally itself with a force set to fight Sony and Nintendo in 1997. **E**

Who is it?

This videogame character's name comes from a clumsy translation of the Japanese word for stupid, and is not, as has been widely rumoured, the result of a clerical error



Virtua kids

AM2 have released mock-up screenshots of a new coin-op, *Virtua Fighter Kizu*, likely to be shown off at the AOU show this month. *Virtua Fighter Kizu* reflects the visual style of AM2's planned *Sonic* beat 'em up (E29) which, again, features cartoony graphics and, strangely, characters with enlarged craniums. The AOU show will also feature a preview of *Virtua Fighter 3* using Sega's new Model 3 technology co-developed by Lockheed Martin. Expect a detailed report next month.

NEC and VideoLogic enter 3D warzone

Another chip takes the PC into the world of fast, smooth 3D...

it is...

Donkey Kong, who first appeared in 1981 and became Shigeru Miyamoto's second most famous invention (Mario is numero uno). The character has now been exhumed by Rare for its highly successful *Donkey Kong Country* series

The battle to take control of the burgeoning graphics acceleration market on the PC is hotting up. Following the arrival of Diamond's Edge card incorporating the nVidia chip last month, NEC and VideoLogic are now set to announce the release date and full specifications of their PowerVR chip (**E**29), a scalable, high-spec 3D acceleration system.

Edge exclusively revealed details about the chip back in issue 18, when the deal between developers VideoLogic and distributors NEC had just been signed. PowerVR provides fast rendering with the now-required selection of 3D effects: Gouraud shading, true-colour modes, rotation and scaling. The unique thing about it, though, is the way it goes about creating such effects. As Trevor Wing, group marketing director, told **Edge**, 'there are some special things about the architecture that are unique to PowerVR. We use what we call a reduced level of architecture, which means we eliminate the z-buffer and all the memory hassles associated with it, completely. However, we do have a 32bit accurate z-buffer function so we forfeit none of its capabilities. Also, because we used an infinite plane-based algorithm – a different algorithm to those most other chips use – we don't need to have anywhere near the access to the texture memory. This means that our performance is a lot higher. In fact, pick a given performance point and we'll be cheaper because we're not carrying the memory. Alternatively, pick a price you want to spend for the cheapest 3D solution, and we'll probably double the performance of other people.'

Nevertheless, all companies producing graphics hardware realise that no matter how marvellous a chip may be internally it will get nowhere without some flashy high-performance software. nVidia have benefitted immensely from the involvement of Sega with the Edge card, a perfectly-ported *Virtua Fighter Remix* could only have helped in their quest to initialise a world standard in graphics add-ons.

However, a similarly invaluable boost toward the success of the power VR system was provided late last year when Namco announced an alliance with NEC and began converting several of their arcade titles to the PC using PowerVR. *Rave Racer*, *Tekken* and *Air Combat 22* are all now complete and ready for release in May, and there are more titles in development. VideoLogic claim these conversions are not only faithful to their arcade predecessors, they actually surpass them: 'If you take arcade *Rave Racer* and make it a little more solid, and a little faster, then you've got the idea. It's better than the arcade version – that's what most people tell us.'

As astonishing as this claim may seem,





VideoLogic assure **Edge** Namco have found elements in the chip which can be exploited to accentuate the original titles. 'Namco plan to enhance the games to use the special features that PowerVR has, like realtime shadows, search lighting and perspective correct texture-mapping.'

In terms of competition, VideoLogic retain a healthy scepticism toward the abilities of rival graphics acceleration technologies. Although nVidia claim their use of quadratic calculations for polygon generation will not pose a problem (Microsoft's *DirectX* library uses triangle geometry), VideoLogic assert otherwise: 'the nVidia chip is using a reasonably specialised algorithm – a quadratic texturing algorithm, which makes it →

Square eye up 32bit

Squaresoft, Japan's foremost developer of RPG games, responsible for such million sellers as the *Final Fantasy* series and *Secret of Mana*, may begin to develop titles for Saturn and PlayStation.

The company has so far restricted releases to Nintendo formats only. Now publicly owned, the company may no longer be able to ignore the success of 32bit or the enticing the fact that few decent RPGs are available on either Saturn or PS.

Marketing director of Squaresoft US, Ted Woolsey, has admitted that talks with Sony and other companies are taking place, but nothing so far has been officially confirmed.







Air Combat 22 (top), *Rave Racer* (above), and *Tekken* (right) – three Namco conversions destines for the PowerVR chip and said to be 'better than the originals were'

Diamond MM get the edge

Diamond Multimedia, producers of the Diamond Edge graphics card, have announced a list of presently available and forthcoming titles compatible with the card. *Virtua Fighter Remix* and *Nascar* are now finished, and nearing completion are *Panzer Dragoon*, *Descent*, *Absolute Zero* and *Mech Warrior 2*. Greg Farris of Diamond also states, 'Many more titles are currently being negotiated and we expect an explosion following the release of Microsoft's *DirectX* API's.'

→ rather hard for it to be supported under the *Windows '95* direct 3D interface, particularly polygon meshes. We don't have that problem with PowerVR – we can support polygon meshes very well. We also have, compared to the nVidia chip, about four times the power.'

Furthermore, the chip will not solely be found in PC graphics cards. NEC will be selling the product to their immense customer base, which means PowerVR technology will be turning up in arcade games toward the middle of the year, as well as PC motherboards and, later, consoles.

Despite nVidia's pre-emptive strike, the war to establish a standard 3D accelerator chip for the PC is far from over. Any graphics technology with Namco in tow is a force to be reckoned with and if the conversions of *Tekken*, *Rave Racer* and *Air Combat 22* are as good as VideoLogic assert, the PowerVR chip will be a major player. More detailed information about the chip, and the ports of *Rave Racer* et al, will appear next issue.

Bad Press

Edge has three more woeful tales berating videogames – male videogames players are akin to Neanderthals, girly games benefit from a make-over, and Sensible Software slags off Man City

Girls just wanna have fun

A widely-publicised report delivered by Northumbria University claims that women play computer games for 'fun' whilst men, their knuckles scraping along the floor, slug it out for the 'challenge'. Apparently, women (sensitive art-loving aesthetes that they are) are motivated by elements such as graphics and sound whereas men are motivated by... well, the report offers no conclusion on this one. Doubtless it's lager or grappling with bits of plastic or something. The experiment that generated these shocking findings involved 80 subjects playing 'high-fun' and 'low-fun' versions of *Sonic 2*. It was not stated which version Sega has been flogging to the public.

(Source: Daily Telegraph 21/12/95)

Game on for the girls

With the increasing number of women playing videogames, some manufacturers are gearing their products to the fairer sex. Sony, it seems, are about to deliver a basketball actioner with the emphasis on the cheerleaders. 'Players will be able to identify with their favourites and choose to be them in the game,' enthused a Sony spokeswoman. Presumably, while the girls co-ordinate pom-pom throwing and the like, male players will be able to direct their favourites into the changing rooms, thence to the shower, with a spot of dinner to follow.

(Source: Stroud County Independent 21/12/95)

Sensible blows it

A wildly indignant Manchester City Football Club swamped the ref recently after reports reached them that they were publicly being compared to Hollywood hooker, Divine Brown. The culprits? None other than Sensible Software. 'Going down, going down, going down', crows their ad for Sensible World of Soccer, 'Fine if you're Divine Brown's manager – not if you're Manchester City's'. Jeff Durbin, City's commercial manager, wails that Sensible 'are flouting public decency laws with this sort of thing'. Which, ironically enough, is exactly what the rest of the country thinks of City's football.

(Source: The Sunday Sport 28/12/95)

If, while perusing your 'favourite' rag, you happen to discover a news story or article bad-mouthing the videogames industry, send it to the usual **Edge** address and it may qualify for inclusion in Bad Press. Free subscriptions will be given in return for published stories

Pippin prepares for Japanese harvest

Bandai's Mac-in-a-box is designed for technophobic internet users

Bandai is putting together the finishing touches to its Apple Macintosh-based Pippin system, which will be launched in Japan on March 31 – it had been scheduled for release last Autumn.

The giant toy company appears to have modified its own vision of Pippin since it announced the project 14 months ago. The unit will now be presented as a combined games console, CD multimedia player and internet provider. Other PC manufacturers are also looking at producing low-cost PCs which can do little more than browse the internet, and this will not have escaped Bandai's notice.

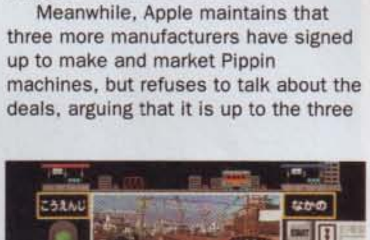
Pippin will launch with ten titles, including educational and multimedia software. Understandably, but yet no less ominously, a videogame version of Bandai's kiddie TV show, Power Rangers, will also be produced.

Meanwhile, Apple maintains that three more manufacturers have signed up to make and market Pippin machines, but refuses to talk about the deals, arguing that it is up to the three licensees to make their announcements when they see fit. Apple also claims they have received applications to produce Pippin systems from another 50 companies and are currently considering these.

Apple's own vision of Pippin reflects, or may even have precipitated, Bandai's decision to go multimedia. In a detailed document posted on the Pippin web site, Apple claim that much of the public find PCs too expensive and difficult to understand, but interest in CD-ROM and multimedia technology is growing. The aim of the Pippin therefore is to provide a 'computing platform designed to make new media content much easier to access, much more compelling, much more affordable than today's PCs allow', ie to provide a console with limited CD-ROM and internet abilities.

To accentuate Pippin's perceived role as a family multimedia platform, Apple are allegedly offering the machine development rights to general consumer electronics companies, rather than videogame companies. In the web site document, Apple berate videogames and videogame consoles for their limited life, limited capability, limited range of content and limited audience. The text goes as far as to suggest the unlikelihood of the videogames industry playing a significant role in the growth of either the CD-ROM or online-based 'new media market'.

However, judging by the poor performance of Philips' multimedia experiment, CD-i, the producers of Pippin may have misjudged their audience. A glance at the UK CD-ROM statistics in this month's Data Stream column (right) shows CD-i has a 1.9% share of the market, while the PlayStation, with its 'limited audience', holds a more impressive 21.7%.







Pippin's early software includes such 'highlights' as transport-sim *Driving Train* (top) and three Gundam games



Pippin adopts the Macintosh design ideals of using elegant curves

Tech specs

CPU: PowerPC 603 RISC chip @ 66Mhz
MEMORY: 6Mb, of which 1Mb is DRAM.
RESOLUTION: 640x480 anti-aliased for the illusion of a crisper picture
AUDIO: Stereo CD quality
ACCESS: Quad-speed CD-ROM drive, built specifically
EXPANSION: One single PCI expansion port; one slot of memory cards of 1, 2, 4 or 8Mb; one serial port (memory cards are all specifically made). A 62-key keyboard and graphics tablet will also be available
PRICE: ¥64,800 (£450) for controller, modem (14,400bps) and four CD-ROM software titles

Data stream

Estimated number of people who will have seen Ocean's recent poster campaign advertising *Doom* on the SNES: **20 million**
Number of complaints received by ASA about the ads: **18**
(depressingly, that was enough to get the ads banned)
According to Mintel and Esquire magazine, amount spent by men each year on Fragrance and skin care products: **£460m**
Amount spent by women on Lipstick every year: **£131m**
Estimated debts of the Duchess of York (as alleged by certain daily newspapers): **£3m**
Number of UK internet users signed up with Compuserve: **200,000**
Number of subscribers to Network Computer Systems in Accra, Ghana: **140**
PC CD-ROM's share of the UK CD games market by Dec 1,995 (source: Gallup/ ELSPA): **64.9%**
PlayStation's share: **21.7%**
Saturn: **7.5%**
CD-i: **1.9%**
Mega CD: **1.7%**
3DO: **1.4%** (doh!)
Escom's (the European PC retailer) predicted losses for 1995: **£20m**
Price paid by Escom for rights to use Amiga technology: **£10m**
Price of Escom's new Amiga A4000 Tower (featuring a Motorola 68040 chip): **£2,230**
Price of Macintosh Performa 630 (featuring a Motorola 68040 chip): **£999**
(although in Spring Apple will discontinue this CISC range to fully concentrate on their PowerPC RISC chips)
TV and Radio mentions during 1995...
PlayStation: **101**
Saturn: **72**
SNES: **68**
MegaDrive: **67**
GameBoy: **52**
(no figures available for Jaguar or 3DO)

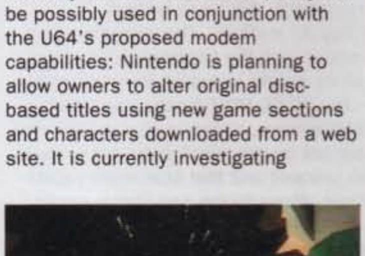
Nintendo64 gets added bulk

Blueprints of the Ultra 64 MO add-on are drawn up

Following a developer's conference at NCL's Kyoto HQ concerning the company's forthcoming U64 console, a few more tantalising facts have emerged concerning the machine's 'bulky drive'.

The results of the meeting, held in late December last year, were released a few days later at a Japanese press conference chaired by NCL frontmen, Hiroshi Imanishi, Genyo Takeda and Shigeru Miyamoto. The 'bulky' storage device now has the codename '64DD' and will sit below U64, connected via a port in the base of the unit. The device, which boasts a 64Mb capacity, will be released roughly seven months after the launch of U64 and will be shown off at this year's Shoshinkai show in November.

Nintendo is basing its drive on magneto optical (MO) technology – which has faster access than CD and is easily writable. The latter quality will be possibly used in conjunction with the U64's proposed modem capabilities: Nintendo is planning to allow owners to alter original disc-based titles using new game sections and characters downloaded from a web site. It is currently investigating internet possibilities with Netscape.



Because of the 64DD's limited capacity the N64 will rely more on realtime effects as seen in this early *Zelda* demo

At the press event Nintendo announced that 3.25Mb (26Mbits) of the system were 'available for new data' although it is not yet clear if this refers to writeable disc space or in-built RAM. Furthermore, according to Shigeru Miyamoto, 'we will also develop a lot of games that require both cartridge and disc, simply because of the potential to make greater games.'

Last month's disclosure of the N64's official specs revealed that the machine contains almost twice as much RAM as previously thought, with 4Mb of 9bit DRAM (36Mbits) arranged in a single area catering for all graphics, sound and program data.



Déjà vu anyone? This Japanese artist's impression of the '64DD' looks similar to the ill-fated SNES CD-ROM drive

The decision to produce the 64DD will not have been an easy one for Nintendo. The company's previous foray into this realm – a disc drive for the 8bit Famicom – was not a success, and the failure of Sega add-ons such as the Mega CD and 32X will be a familiar portent to Nintendo. Nevertheless, the 64DD was a necessary move. For reasons of cost, the console itself had to be cartridge based – a far cheaper option than including an internal drive. However, without the 64DD's capacity, it would be difficult to develop sizeable *Zelda*-style RPGs on the U64, a staple diet amongst Japanese gamers.

Despite the added memory offered by 64DD discs (eight times that of standard U64 cartridges), the capacity is still way short of the storage supplied by standard CD-ROMs (600Mb). This implies that U64 games will rely much more heavily on realtime texturing rather than pre-rendered graphics, which should prevent a torrent of CD-ROM ports.

What is it?

It began ten years ago in the US as Quantum Link, an internet service for Commodore 64 owners. The name of the service was changed to something much more familiar in 1989 and by1990 it had 50 to 75,000 users



Onyx cubed

The successor to the ultra powerful Onyx Reality Engine² graphics workstation has been unveiled by Silicon Graphics. The Infinite Reality Engine³ will offer ten times the power of an RE² – previously the world's most powerful graphics workstation – which means a rendering capability of a staggering ten million polygons per second. Beta versions of the system will be ready for testing by the end of the year. Next month Edge reveals exactly what level of realism such a system is capable of. Dream...

Atari corp falls on hard times

Mass lay-offs cause speculation over the father of gaming's future

it is...

America Online, now America's largest internet provider, being used by 4.5 million people. AOL is soon to be launched in Britain and aims to become the UK's biggest provider of internet services by 1997

In the American games press it has been compared to the last days of Rome. Atari corp, that iconoclastic stalwart of the videogames world, appears to be in a state of collapse. Ted Hoff, the president of North American operations, has resigned, a number of employees have been laid off and, perhaps most telling of all, Jeff Minter has untethered his Llama and cantered off to pastures new. The latter will be sorely missed by Atari, his *Tempest 2000* conversion without doubt the Jag's definitive title.

Rumours of Atari's imminent demise have been fuelled by the company's apparent breakdown in communications with third party Jaguar developers. High Voltage Software (*White Men Can't Jump, NBA Jam: Tournament Edition*) report that Atari has not contacted them about any further Jaguar projects and Beyond Games (*Ultra Vortek*) state that Atari has dropped contract negotiations with them regarding a proposed sequel to *Alien Versus Predator*. IG Online, who have followed Atari's recent difficulties closely, suggest that Atari will finish the games currently in development but, 'will not pursue any new titles, focusing instead on the PC games market'.

This idea to concentrate on the PC games market was, as Next Generation Online reports, perhaps Ted Hoff's last attempt to save Atari by channelling internal talent toward areas of potential profitability (ie software development). However, it appears that Atari, at least officially, still has faith in the Jaguar as a competitive platform. In last month's CTW it was reported that Atari felt the Jaguar's new $99/£99 price point would make it a 'massmarket proposition'. Furthermore, company executives (the few remaining) are still referring to staff lay-offs as restructuring and reorganisation. Atari's chief financial officer, August Liguori, claims: 'We are not going out of the videogame industry. We have $50m and we're going to continue making strategic investments in developing and publishing for all platforms'.

Despite this denial, news of Atari's difficulties has reached beyond the specialist press. Variety, America's media and entertainment newspaper, ran a story this week entitled, 'Atari Zaps 20 staffers'. The story mentions reports that the company is liquidating all its assets including Atari Interactive – the PC CD-ROM development project. Furthermore, Variety's sources indicate current development deals are unlikely to proceed and that Atari must vacate their offices by the end of this month.

The most damning indictment of Atari's current situation comes from an embittered Tedd Hoff who, according to NG Online, said of the 20 lay-offs mentioned above, 'it was an indication that Atari's long term intentions were not to continue in pursuit of videogame development or publishing, neither for Jaguar or Atari Interactive'. According to Hoff, many of the lay-offs came from the creative and development end of the company.

So is this the end for the once legendary games corp? According to Next Generation, former insiders at Atari consider the company is finished in the games industry. There are theories that the Tramiels will take their $50m and move to a new business, possibly computer components, but these are unconfirmed.



With the resignation of key directors and staff lay-offs across the board, has Atari's big cat spent all its nine lives?

Olafsson out

Ex-president of SIE and the man responsible for launching the Playstation in the US, Olaf Olafsson, has resigned from Sony. Olafsson, a prominent member of the videogame industry for years and widely regarded as one of the industry's top managment prodigies (see p59), left due to arguments over his pricing policies.

Apparently, the 33-year-old's bosses in Tokyo were dissatisfied with the PlayStation's low $299 retail tag, and would have preferred a more profit inducing $350 or $400 price point. The resignation comes just four months after Olafsson was removed from his position as SIE president.

DVD moves closer to 'industry standard'

The DVD power players finally settle on an agreed format

DVD, the advanced storage medium hoped to replace the CD, is moving slowly toward its goal. A major contributing factor to this has been the agreement reached by the previously warring Sony/Philips and Time Warner/Toshiba factions, to contribute toward an industry standard, rather than continue with their own proprietory technologies.



The new DVD format is closer to Toshiba's SD than Sony's prototype

The agreed format is, in terms of form, much closer to the Toshiba/Time Warner SD (Super Density) concept. Each disc will be made from two half-thickness discs glued together, providing a movie running time of 133 minutes and a memory capacity of 4.7Gb per side.

The journey toward a standard has not been smooth. The original compromise, in terms of the disc's form, was only resolved after the computer industry put pressure on the two factions to adopt the thinner SD design, meaning a slim enough ROM drive could be built to fit into the standard computer slot. The new conglomerate is also yet to settle on a name for the disc, which is not a good sign. If they can't find a name, it doesn't say much for the chance of a successfully launch.

However, work on DVD is continuing and the new format was recently displayed at the Winter CES in Las Vegas. Features of the movie disc will include multichannel sound in different aspect ratios, parental lock, and a menu system allowing viewers to access their favourite bits of the film with speed and ease. In a nod to the rise of multimedia entertainment, discs will also contain additional info on each film (including facts about the cast and crew).

DVD should be launched in the US at the end of this year with 250 software titles due to coincide. A retail price of $499 has been suggested which, although lower than expected, may still prove a bar to the systems' success – VHS videos are available for under $200.



'Video on a chip' realised

NEC, developers of Silicon Audio, a credit card sized device designed to provide a chip-based alternative to audio CDs (see E20), is currently developing the Silicon View: a hand-held solid-state video player which weighs around just 295g. The device can play back MPEG1 audio and video and, like its Silicon Audio counterpart, uses a flash memory card to store the data.

At the moment, the card has a 40Mb storage capacity giving it just four minutes of playback. Consequently, the device is unlikely to premiere until the end of the century, when the company's own gigabit chip will come into commercial use.

Essential reading

Games War



- **Michael Hayes and Stuart Dinsey**
- Bowerdean, £24.99

ISBN 0-906097-34-7

As '16bit' becomes irreversibly a term of abuse or nostalgia, and flabby old heavyweights Sega and Nintendo clamber into the ring to get it on with faster, leaner contenders for the 32bit title, what's really needed is a pacy, exhaustive overview of the industry: why it's where it's at and where it's likely to be when the dust has settled. Sadly, Games War is not that book.

First charge: parochialism. The games industry is a global business. The fattest markets are Japan and America with Europe a skinny third. The UK is but one small component of the smallest major market. So why is so much of this book devoted to this marginal (though interesting) island? Laziness? Maybe. Time constraints? Probably. An inflated sense of Britain's importance? Certainly.

The UK (as the book acknowledges) has one of, if not the highest, proportions of consoles per household in the world – a glamourous statistic indeed. But due to economic factors (low incomes/high software prices, etc) Britons buy fewer games per console than almost anyone else. Since profits are made from software, not hardware, this fact goes some way to explain why the UK has to endure those ropy PAL conversions. Despite the hardware ownership, despite the fact that nearly 40% of games are developed by the creative talents of this country, and despite the fact that Sega of America's success can be fairly attributed to the influence of Sega UK's funky marketing style (etc, etc), no-one makes enough money out of Britain to really care. Reading Games War is akin to reading a book on Wimbledon that only ever mentions Jeremy Bates.

Second charge: style. Games War has no idea of who its readers are. It takes the dry, dead tone of a GCSE textbook (ie the audience knows nothing) yet makes endless casual references to technical terms and gaming shibboleths (ie the audience knows everything). The resulting admixture, complete with graphs, tables, and stats aplenty, falls somewhere between a Dixons' annual report and a school magazine. Furthermore, in the absence of any interviews, quotes, gossip or even plain opinion, the authors convey almost no engagement with, or enthusiasm for, the material. Imagine, if you will, The Joy of Sex written by a nun.

Third (and final) charge: value for money. A single copy of Games War, at 150 pages, will set you back twenty five quid. A year's subscription to **Edge**, at 100 pages an issue, comes in at £34. Has the jury reached a verdict?



Express yourself in **Edge**. Write to: **Edge** letters, 30 Monmouth Street, Bath, Avon BA1 2BW

In your otherwise entertaining and instructive article on console hype, I feel you've glossed over some important points. Firstly, most of the people I've seen lusting over super consoles are middle class kids – not affluent twentysomethings with hyperactive credit cards who, given the current economic climate, are a rare breed, if they actually exist at all outside the stale imaginations of the pony-tailed cretins who populate ad agencies. Most of the 'grown-up geeks' (to paraphrase your editorial) whom these machines are supposedly aimed at will have experienced all this empty hoo-haa before and will not be impressed by the launch software of the Saturn in particular. Neither, I suppose, will they be taken in by the cheap and transparent theatrics that the ponytail mob choose to clothe the new machines in – despite all the pseudo-Freudian claptrap which surrounds them.

Take a message, boys: these things are toys. They certainly bear little relation to Sol (memo: a yuppie drink which died out with the yuppies. File under moribund fads). Media-sophisticated kids aren't fooled by the advertising, as you pointed out – they're just excited by the new machines and the new games that come with them. This brings me scrappily to my second point; the PlayStation has succeeded in spite of, rather than thanks to, its pointless and childish ad campaign. Given the amount of market research they must have done I'm astonished that such an ill-conceived and uninspired idea could have been worked through and even approved by Sony. Then, veering to the opposite extreme, they make a poor attempt to tap into counter-culture by giving out Sony roaches. Who is that aimed at – people who've already torn up most of their Rizla packets?

With more MegaDrives sold in 95 than in 1994, it seems plain that the Grown Up Geeks are snapping up second-hand 16bit gear that the kids, in their eagerness to embrace the new machines, are throwing away. After all, it was probably bought for them in the first place. One pence in the pound isn't enough of a feel-good factor to make me blow a month's wages on a PlayStation and two or three games.

Quite why Sony and Sega persist in advertising I don't know. There are a new generation of media-saturated people out there who often don't even bother to look at adverts, preferring to rely on 'impartial' third parties (ie magazines) to inform them. It was **Edge** and its brethren that sold the PS and almost killed the Saturn – and despite the bleating of some readers, all but buried the 3DO. But you know that anyway; after all, Future already have an advertorial magazine in Sony's back pocket.

Stuart Codling,
PA Data Design Ltd

Your comments stereotype gamesplayers as much as they do ad execs. First, your assumption that it is the traditional demographic of kids and not adults that are buying new consoles isn't entirely tight. True, the SAPS adverts were more comical than powerful, but Sony's guerrilla marketing tactics (roaches, etc) have been inspired. And to say there is no need for advertising is ludicrous – Sony are after the mass market, not just readers of the specialist game mags, who make up a fraction of their potential consumers.



Sony are selling toys, not gimmicks for drug-fuelled lifestyles, says Stuart Codling





Since U64 stores *Mario*'s graphics on a cart, yet *Jumping Flash* needs a CD, Nintendo must have 30:1 compression, thinks Stephen Erlebach

I am writing to you in response to the answer you gave to Ritesh Solanki's letter in **E28**, in particular, part one of his question about Ultra 64's compression.

Nintendo claims to have 30:1 realtime compression. You state that 'Nintendo's figures are, of course, complete nonsense.' You then go on to say, 'Compression

rates depend heavily on the type of data being compressed, but for detailed graphics anything above 4:1 is debatable.' I completely disagree with your statement in this regard. Going back to the CD vs cartridge argument, compare two 3D platform games, *Jumping Flash* (PlayStation) and *Super Mario 64* (U64). Jumping Flash has 18 stages and fairly detailed graphics and comes on a CD with 650Mb capacity. Super Mario 64 has nearly 150 stages (according to the Games Master feature on TV) and exceptionally detailed graphics, comes on a cartridge with a comparatively paltry 8Mb capacity, yet is over ten times the size of the PlayStation's *Jumping Flash*. This would mean that **Edge**'s figures are, of course, complete nonsense and that Nintendo have indeed come up with the goods. This would also mean that their 'bulky' storage device may even be able to outperform CD in terms of memory capacity.

Stephen Erlebach, West Molesey

It is unlikely that *Jumping Flash* uses any more storage space than *Mario 64*. Although PlayStation CDs can store up to 650Mb of data there is no obligation to fill that space. In fact, on close examination of game CDs, it soon becomes apparent that the majority of most discs are blank. Of the space that is used, a high proportion of that will be taken by music rather than game code or graphics. In addition, Ultra 64 implements textured 3D rather than bitmaps, which also requires less storage space. Regarding the 'bulky drive', there can be little doubt that Nintendo's add-on will outperform CD – that's why they have eschewed CD-ROM in favour of Magnetic Optical (MO) technology.

I am writing in reply to your response to Paul Biggs' letter in **E**28, in which you assert that 'it's debatable whether [the Acorn A3010] would be a better choice than a PC for assimilating skills for games development.' At first glance, the PC may appear to be the machine of choice for the would-be games programmer – everything is available for it. There are commercial and public domain C and C++ compilers and 80x86 assemblers.

All of this is (patently) true. Get a PC, get a copy of PCC and a few good books and you can start writing games software on the PC. You could then learn all the intricacies of the 80x86 family (whose interesting programming nuances could inspire a whole series of books titles 'How Not to Design an Instruction Set') and the rather primitive but effective PC screen display system, knock up a few graphical demos and get a job as a PC programmer.



Learn to program C on an Archimedes, not a PC, urges Angel – the Archie has a modern RISC chip and a well-designed instruction set

However, if you wanted to apply your new-found skills to a 'next generation' console, you might have a little trouble competing with the bright chap with the Acorn machine. While you've absorbed several books' worth of info about a geriatric CISC processor, your rival has learned all about a relatively modern RISC design. At least you will probably have picked up C, which is a globally useful skill.

The important skills for games development are mainly those of good programming in general – being able to partition a complex project into small, self-contained modules, knowing how to design efficient algorithms for particular problems, having the knack for error correction and debugging and so forth. These skills can be developed in practically any language on any platform. Indeed, the more the merrier. It would be harder in finicky Assembler language than in C and it would be harder in 80x86 or MIPS than in 680x0 or ARM code.

In addition to these skills are lesser tricks, such as dealing with memory-mapped displays and audio hardware (and more general custom processors) and programming state-of-the-art RISC processors (often modified from 'real' examples and with sparse documentation). These specific skills are, however, based on general principles, and a familiarity with similar hardware designs (eg the custom chippery in the Amiga computer, or the RISC processor of the Acorn machines) is a bonus.

In my opinion, the only thing worth learning on a PC (unless you want to be a PC programmer) is how to write good C, and the fundamental organisation of Assembly language programs. You can do that equally well on an A3010, or indeed an A1200, and in addition you can learn about RISC processors or custom chip coding respectively.

Angel, Swansea

The reply in **E**28 was not dismissing learning to program on a RISC machine, rather pointing out that to learn to program a PC, however laborious and taxing, is more profitable than mastering the Archimedes chipset.

The fundamentals of C, ie the ANSI standard, are included in practically every compiler currently available and can therefore be acquired on any machine. Specific hardware tricks can only be learned by programming for a specific machine, and since the Saturn, PlayStation, etc, are coded on modified PCs, it is surely better to get to grips with the PC system. Although RISC coding is inevitably the future, it is far wiser to program the Power Macintosh, powered by a RISC-based chip with an installed user base of over a million, than the Archimedes, a struggling, albeit in its time advanced, relic of the eighties.

What is all the current fuss about retrogaming? Having been a follower of the videogames scene for over a decade now, I owned most of the machines that are now being referred to as 'classics'. Personally, I feel these people are looking through rose-tinted spectacles (as it were). Sure, in their day, some of the games were amazing. Who could forget Rare's (then Ultimate Play The Game) Spectrum efforts like *Jetpac*, *Atic Atac*, *TransAm* and their ilk? BBC *Elite* – another game which amazed me. However, the difference then was that most of the machines were very easy to push to their so called 'limits'. Admittedly some programmers did push back the barriers (such as Dave Perry with Digital Integration's *Extreme* on the Spectrum) but these were merely showpieces, designed to show off a programmer's expertise. Most games relied on innovative and exciting gameplay to pull in the punters (something which seems to have been reversed in recent years, with many games adopting the 'graphics over gameplay' routine).

However, when looked at today, these games pale into insignificance, even against some of today's so called 'mediocre' titles. They have little or no depth and many are frustrating to the extreme. In short they are incredibly dated. It really irks me when people go on about the 'classics', and bemoan the lack of

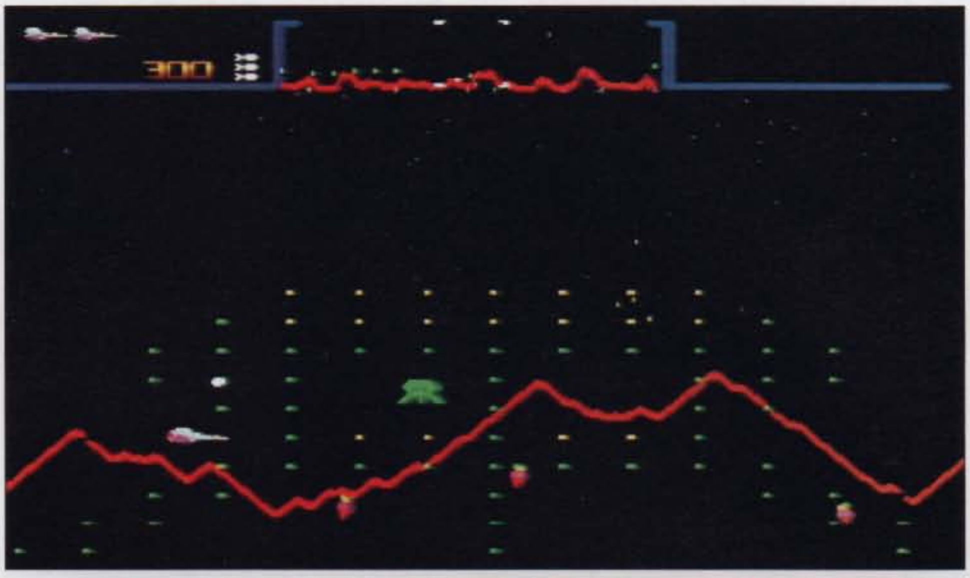
Continued next page

viewpoint

variety in today's games. I feel if these people actually sat down and played some of yesterday's games, they would without doubt change their tune.

Stephen Craig, Irvine

You certainly have a point. Many older games simply do not have the gameplay sophistication to hold people's attention nowadays. However, the fact that games such as Konami's *Hyper Sports* PCB (Retroview, **E**23), Capcom's *Gunsmoke* (**E**21) and more recently Namco's *Museum* CD have been played more by the **Edge** team than new releases indicates something must be missing from much contemporary software. While many of the games you mention would not stand up in today's terms, many older arcade games possess a sophistication and challenge that eclipses current offerings. Remember just how many buttons were used in the arcade versions of *Defender* or *Asteroids*...



Antiquated games hacks may harp on about the brilliance of so-called 'classic' titles, but Stephen Craig believes it's all hog wash. When you look at most of these games, he says, they lack any in-depth gameplay

First, I think your magazine is magnificent. High quality, great reviews, and large amounts of very relevant information – techno-heaven. I wish to bring up a point which has largely been overlooked in the last four issues. I have been following the progress of the PlayStation with great interest, and think it is a great machine. There is one thing that holds me back from buying one, though – bugs. The polygon routines have quite serious bugs in them. As a 3D programmer myself, I suspect that the bugs are in the silicon, not the games. You have mentioned before about 'polygon folding' and shown examples, but I think the problem is a lot more serious. If you have a good look at the floor in *Ridge Racer*, *Wipeout*, *Toshinden* or *Assault Rigs* you will find that as a 'tile' of the floor approaches the bottom of the screen, the texture goes bananas. The classic example is the white stripes on the road in *RR* which turn into zig-zags as you go over them. The floor in *Toshinden* becomes lumpy because the textures go potty. I could point out problems in *all* of the games available at the moment, but that is being pedantic. After speaking to two people from Psygnosis, they admitted that it is a problem and much time is spent getting round the bugs. To label the point, load the 'T-Rex' demo and turn it upside-down – the legs just tear apart. Not good at all.

A lot of people will see this as being really fussy and think I should overlook the problems and shout about the good parts, but the quality of games is reduced due to the person-hours needed to get around the bugs. It is a very simple problem to address and I feel that insufficient bug-testing of the polygon hardware was done by Sony. Does *Fade to Black* do this? Does *Doom*? No. So why does a multi-billion dollar company like Sony get it wrong?

James Wilkinson, Software Engineer, J.B.wilkinson@win0109.wins.icl.co.uk



James Wilkinson is concerned over the PlayStation's polygon folding. Surely Sony could have eradicated these bugs, he suggests

Just as the SNES suffered from crippling sprite slowdown in its first few years, getting round the PlayStation's powerful, yet compromised, 3D hardware will be another hurdle for programmers to clear. You may draw comparisons with 3D games on the PC, but to compare *Wipeout* on the PlayStation to its PC by-product is unfair – the incredible speed and use of colour trounces what you'll see running on a £2,000 Pentium. And the same is true (to a lesser extent) in both the PlayStation versions of *Doom* and *Fade to Black*. Of course, the PlayStation's graphical inconsistencies are unlikely to disappear altogether and the arrival of Ultra 64 looks set to make such shortfalls appear even more conspicuous. However, it's debatable just how much game quality will suffer as a result of the extra effort required by programmers. Hopefully some companies will realise that time could be more wisely invested by improving how a game plays rather than designing clever algorithms to eradicate the occasional graphical imperfection.

3DO online

Hailed by fans as one of the best videogame Web sites, all Edge could find was blatant 3DO propaganda and self-adulation

When netview dissected newsgroups last month, most participants named the 3DO Web site as the best offered by any of the major console manufacturers. Unfortunately this now appears to be more of a comment on how poor the other sites are, rather than how wonderful this one is.

That is not to say the site is a complete failure. There are loads of sections on offer here covering an abundance of 3DO related areas: software, hardware, new releases, the company itself, its employees, etc. However, when any of the sections are actually accessed, they are, more often than not, disappointingly brief and superficial.

For example, last month the main item on the home page was an online comic strip featuring 3DO's new videogame hero, *Captain Quazar*. The strip was colourful, well laid out and humourous in tone, but there was just so little of it. And because of the heavy graphical content, it took an age to download. A related headline was a press release announcing 3DO's acquisition of *CQ*'s developers, Cyclone Studios – a software company specialising in action/arcade titles. Although much more wordy, this page amounts to little more than corporate back-slapping.

The graphical extravagance of the *Captain Quazar* page is not an isolated phenomenon - the 3DO site is highly graphics-based, which, in itself is not a problem. However, nice pictures need to be accompanied by interesting text if a page is to be worth the visit. One encouraging section headed, '3DO weekly company meeting' seemed to promise a behind the scenes look at how a videogames company operates. The intro leads in with, 'Every Friday, at the end of the day, 3DO gets together to talk about the latest and greatest news about 3DO' - and from here you'd expect a transcript of one such meeting. However, what you actually get is three photos of the meeting (that take ages to appear) and no text at all. Perhaps the lack of 'great news' curtailed this particular gathering before transcripts were made.



There are some good sections, though. The forthcoming release pages are comprehensive and revealing (if a little short on gameplay details), meaning 3DO owners are kept up to date with product available in the months to come. There's also a detailed behind the scenes look at Blade Force (see **E**27) which includes a lengthy section on the game's 3D engine written by the its creator, Bill Budge. Also impressive is the way the whole thing is written in a warm, familiar tone – you do get the feeling 3DO are trying their best, if not quite succeeding, to create a worthwhile service for their customer base.



Ultimately, the 3DO site is approaching the sort of quality and depth that should be on offer from a major player in the videogames world, but still falls way short of perfect. In many ways this can only be expected. When a videogame company sets up its own Web site, there must be a strong temptation to make it little more than an extended advert. Throw in a smattering of screen shots, a few short game descriptions, a handful of OK reviews and then chuck the whole lot on the internet. Simple: marvellous publicity with the minimum use of, or need for, creativity.

Except it doesn't, or at least shouldn't work like that. The Web is supposed to be educational – it is more than a corporate ad board, it is a world-wide information forum. Companies like 3DO should, as they say in the States, get with the program, and start producing sites that are interesting, complex and informative, rather than badly disguised advertorial. **E**

Site:	**3DO company online**
Address:	**http://www.3do.com/**
Format:	**Online information about The 3DO Company**
Origin:	**Redwood City, California**



3DO's Web site is a graphical tour de force, restricting access to all but the fastest modems

On offer

New releases – brief outlines of forthcoming titles as well as loads of screen shots. This month features, amongst others, *Snow Job, Captain Quazar, Battle Sport* and *Lucien's Quest*

Hardware info – a brief look at the companies responsible for 3DO consoles, including GoldStar, Panasonic, etc

Press releases – a soupcon of 3DO's most recent press releases. This month there's news of the Matsushita buy-out and the new $199 price for the Goldstar 3DO console

1995 3DO company annual report – the whole text. Only those interested in stock plans and accrued expenses need bother looking here

Unofficial 3DO Web sites

1. Erin Fritz's 3Domain
http://www.public.iastate.edu/~fritz/3do.html
Graphically lush featuring detailed, unbiased reviews

2. Chuck's Unofficial 3DO www page
http://www.ohiou.edu/~mcginley/vidgame.html
Long list of press releases and game reviews which are reasonably up to date

3. Corey's 3DO page
http://www.imc.sfu.ca/corey/3do/
Well presented with short, snappy reviews

4. Al Amaloo's 3DO Gamer's Advantage
http://www.mcs.net/~ala/
A comprehensive list of tips, cheats and walkthroughs

With the failure of MPEG1 to become a true massmarket proposition, increasingly the multimedia industry is looking towards a software solution to digital video. **Edge** talks to Eidos, one of the leading contenders

Eidos

Format:	**PC and Mac**
Publisher:	**Eidos**
Developer:	**In-house**
Release date:	**Out now**
Origin:	**UK**

The codec's current 150:1 compression rate allows it to compress a 95 minute film onto a single CD

Last year Eidos, a relatively unknown company with a turnover of a mere £254,000, announced that it was in discussion to acquire software developers Domark, Big Red and Simis in a deal worth over £13 million. Termed by the stock market a reverse take-over, the company had to issue 1.5 million shares to finance the deal, all of which were sold.

It's a fair bet that anything the smart money in the stock exchanges gravitates to has tremendous potential – what's got the brokers so interested this time is the *Eidos Software Codec*. The *ESC* is a proprietary, software-based solution to video compression and decompression (hence codec) and while it's a long way from being the first of these ever to be developed, it has the potential to develop into the most influential.

With MPEG staggering lamely on towards the introduction of MPEG2, software routines such as *Cinepak*, *QuickTime* and *Indeo* seem to have stolen the high ground from the hardware-based systems. The benefits are obvious: for a start no extra hardware needs to be installed, and the playback software can comfortably be inserted as part of a published CD-ROM (*Eidos*, for instance, is loaded into RAM from disc and takes up approximately 250K). Software routines are also scalable, adapting to the speed of the host machine's CPU and tending to benefit from the consistent doubling of CPU speed every 18 months; unlike hardware which, once it's set in silicon, is set there for good.

Eidos' technical director, Simon Protheroe, likens it to Einstein's famous quote about standing on the shoulders of giants. 'You've got these huge multinationals like Intel and IBM making these amazing processors and amazing computers and they're getting faster and faster – twice as fast every 18 months – and completely revolutionising everything. What we have to do is just say, 'Oh, your computer's twice as fast now is it? Well that means you can do twice the resolution or twice the compression rate or whatever."

OPTIMA

The codec's current 150:1 compression ratio (equivalent to reconstructing a page of text from three words) allows it to compress a 95 minute film onto a single conventional CD. This compares very favourably with MPEG's two CD requirement but, perhaps more importantly, the end quality of the decompressed footage is also rapidly approaching superiority.

Protheroe attributes this to the company's initial development of the



Unlike MPEG chips the codec is software-driven, meaning compression times depend on the host's CPU – speeding up with newer processors



One use for Eidos' codec lies with videophones (see side story). Being software-based, the $200 codec should smash BT's price of $4,000

Videotelephony

One of the main current thrusts of the codec's development lies in the videotelephony field. As with CD-ROM, the playback software can be sent in the message header, meaning that a receiving station is unnecessary for playback. Crucially though, especially with the rapid increase of internet availability, most of the equipment is already extant in the marketplace

'The next stage in the process will be when digital cameras come out,' says Protheroe. 'They're essentially cameras on a chip, costing about $100 OEM. They plug into the parallel port of the computer and they'll give you realtime video. The only real application for that is video communication and we have the software to bundle with the hardware. Suddenly, instead of paying $4,000 for a BT videophone it's $100 for the camera plus mark-up (about $200). That's 20 times cheaper.'

Industry analysts expect videotelephony to go massmarket at a price point between $1,000 and £1,000. If Eidos can hit the market at around $200 and achieve the quality on domestic equipment of the demonstration set-up in their offices, then they could have a serious heavyweight product on their hands.

'When my world domination ego escapes a bit,' says Protheroe, 'Bill Gates is saying there are 200 million PCs. Well, there are 2,000 million telephones and 2,000 million TVs in the world which can use our comms technology.'

codec as part of an off-line video editing system. Frames are often examined individually in that market and any evidence of macroblocking would not be tolerated. But *Eidos* is a long way from being the only codec on the market with *Indeo*, *CinePak*, Duck and Smack also jostling for dominance. Unsurprisingly, Protheroe is dismissive of the competition.

'For a lot of the algorithms they get some mathematical formula, then they implement it, it does something and that's it, they can't change it. It just happens that it seems to conform quite well with how human perception works. We've done it from the other side, we've actually asked the professional [video] editors who spend their whole lives crafting images what they think about the pictures and how they can be improved. Our algorithms match much more closely the way human perception works and while it's true that some mathematical formulas by chance correspond reasonably well, ours is actually designed to fit.

'For example, the human eye is not very sensitive to blue. In frequency, blue and green are actually miles apart compared to green and red but blues and greens actually appear very similar visually. There are hundreds of shades between red and green, like oranges and yellows, and it's all to do with the ripening of fruit in our pre-history; as the colours don't change dramatically when fruit ripens we're very sensitive to that. If you know that, then you know not to have millions and millions of code words for all the shades of blue because you can't tell them apart, but concentrate the code words around the oranges and reds that make up the picture.'

Duck's *TrueMotion* is probably *Eidos'* nearest competitor. Unlike *Eidos* – and indeed MPEG – which compare frames with preceding ones and throw away the repeated data, it's an intra-frame system. This allows it to compress frames individually without referring to either the previous or next frame. Supported by Crystal Dynamics, Sega and Gametek it is, however, handicapped by requiring a very fast data source to perform at optimum speeds.

Eidos meanwhile will work quite happily on a 486/33 with a sub-double speed drive. Admittedly, peak performance isn't reached until you ascend into the realms of the Pentiums and PowerMacs but the quality is still impressive. Naturally Protheroe refuses to go into too much detail about the codec's workings, but at its core is a pre-generated look-up table which works in conjunction with optimised CPU dependant algorithms to compress and decompress in realtime. As clock speed and average RAM sizes have increased, so has the size of the look-up tables, allowing progressively more complex questions to be asked to *Eidos* by the software.



Eidos' codec will be compatible with both Mac and PC platforms

Eidos is keen for CD-ROM publishers to start utilising their codec and one of the stated reasons for their takeover of Domark was to obtain a platform to showcase their technology, primarily in the US. To that end, three games released so far – *Tank Commander*, *Absolute Zero* and *Championship Manager II* – have used the codec in their intro sequences. Later on this year, Domark will also release the helicopter warfare sim *Apache* which will be the first title to adopt *Eidos'* compression for its in-game graphics. Intriguingly, also under development are plans to incorporate the codec into a realtime 3D rendering engine, currently being assembled by Simis. Realtime branching is also a possibility, the video-editor managing this quite happily at data rates analogous to quad-speed drives.

Sega's amusement R&D department #3 is firmly at the leading edge of arcade game design. **Edge** talks to the developers of *Virtual-On*, a robot-based beat 'em up destined to electrify Japanese arcades

Virtual-On

Developer: **Sega AM3**
Release date: **Spring**
Origin: **Japan**





The gigantic arenas rotate and scale with incredible fluidity

When word gets out that Sega are releasing another beat 'em up, images of *Virtua Fighter* are immediately brought to mind. How different then, that AM3's *Virtual-On* takes place in an arena inhabited by Japanese mech-robots, blasting each other with shards of intense lasers. The resultant 60fps imagery is astounding, enhanced by the two-screen cabinet which houses *V-On*'s electronic brain. *Virtual-On* plays in a true 3D environment, unlike *Virtua Fighter*, so it is necessary for each player to see the action from his own perspective. Hence the use of two monitors. A third 'bystander' monitor is also planned for arcades large enough to house such equipment.

Virtual-On is a spectacular high-tech showcase. Mechanical beasts race around the arena blasting each other with lasers, bullets or rockets. As this mayhem continues the player camera pans around the action or zooms in on particularly impressive explosions. The effect is slick and conveys a cinematic feeling similar to that found in the Gundam movies that have influenced the robot design.



In motion, *Virtual-On* looks thoroughly stunning. Sega's Model 2B board provides the visuals



Edge met two of the men behind *Virtual-On*'s success – Juro Watari, producer and Koichi Ozaki, designer.

Edge So, why a robot game? Have you been influenced by the Gundam series (a Japanese animated series involving robots)?



JW Gundam's robots have been influential to our generation and so we were happy to implement these machines that were so important to our childhood.

KO When we age we tend to lose our wonderment with the world. The robots are still fantasy, so perhaps they rekindle that imagination.

Edge Who designed the robots?

JW We contacted Katoki Hajime, the robot designer in the last Gundam series. He'd never worked in the videogame industry before and was used to animation studios with a speed of 24fps. With *Virtual-On* he had to work with a refresh rate of 60Hz, which offered new challenges.

Edge Why does the design include a Saturn moulded to the robots' backs?

JW We contrived this idea when we were discussing the initial robot



The intricately-modelled robots were designed by the same animation team that worked on the latest Gundam OAV (original animation video)



Designer Koichi Ozaki admits to a childhood fascination with robots





The robot cast of *Virtual-On* have been designed by Katoki Hajime, the artist for the cartoon series of a similar nature

designs with Katoki Hajime. We wanted to give each robot individual specifications and also to represent Sega imagery. So, we decided to fix a Saturn to the back of each robot which would store the robot's specs. When the robot's power increases, or when there is lots of high-energy action, the cover of the Saturn opens and you can see the CD inside.

Edge Do you think the Japanese robot design will win fans in the west?

KO We made some tests in US and UK arcades and the feedback was very positive. The advantage of using Japanese robots is the speed association. Because we are Japanese, we use robots typical to us, but because of the playing characteristics associated with that choice the game should have universal appeal.

Edge When did work on the *Virtual-On* project begin?

JW Our preliminary basic research started in April 1994. For the following twelve months we continued to gather information until we decided the game was feasible. So, coding started in April last year. What you can see now has been done in six months, therefore.

KO We also did a prototype of the game, which was started a year and half ago.

Edge Was motion capture technology used at all for the animation?

KO No, we calculated all the animation frames one-by-one using *Softimage*. Although motion capture would have been nice, we cannot use it for flying robots, or high-speed slides.

JW The animation was very difficult. Motion-capture can only re-create human movements. When a robot is walking, he has a very specific way of doing it, very different to humans.

Edge *Virtual-On* is a new departure for Sega. What do you think is the game's main rival – Namco's *Cyber Commando* or *Cyber Sled*?

KO We don't have a rival yet, our game is on a far higher level than these that you mention! Our robots have human forms and use swords – nothing like this has been seen before.

Edge What was the most difficult factor when developing this game?

JW We experienced the same difficulties when writing *Virtual-On* as can be found in *BattleTech* – the lack of precision between your robot and the enemy meant it was difficult to tell whether you'd hit the enemy or not. Moreover, we had to create that feeling of excitement. In Japan when we think of robots we think of Gundam robots – speedy creations with immediate response to the user. Also, Japanese robots have to look like a warplane and tank moulded into one. If we fail to meet these requirements the game will not be successful in Japan. Even with a Model 2 board we weren't exactly certain we'd be able to fulfil all these goals. Projectiles were also a problem...

KO We watched lots of videos running some real weapons. But in the game these motions are difficult to understand. So we had to make more fathomable motions for the player, yet retain realism.

Edge So you used the Model 2 board?

JW We are using two Model 2B boards, actually. Normal fighting games, like *Fighting Vipers*, only need



Juro Watari, AM3 producer on *Virtual-On*





Cinematic cut scenes are superbly integrated into the game's pace. Here, the robots leave the docking hangars in preparation for battle





Night scenes are resplendent with superb lighting effects

Arcade charts

Top ten PCBs	weeks in charts
1 Gals Panic 3 (Kaneco)	5
2 Senkyu (Seibu)	12
3 19XX (Capcom)	2
4 Desert War (Jaleco)	26
5 Quiz (Nahanikon)	37
6 Viper Phase 1 (Seibu)	30
7 Avengers (Data East)	2
8 Puzzle Bobble 2 (Taito)	18
9 Mad Shark (Allumer)	56
10 Striker 1945 (Psikyo)	26

Top five dedicated arcade games	
1 Alpine Racer (Namco)	6
2 Rave Racer (Namco)	18
3 Daytona USA (Sega)	70
4 Sky Target (Sega)	6
5 Cyber Cycle (Namco)	29

Continued next page





Each robot has its own arsenal of weapons including *big* lasers...

Continued

one board because two fighters can fight in one plane. For *Virtual-On* we needed to have two different views on two different monitors, hence the need for two boards.

Edge It's rumoured that the game may also have a live-screen displaying a general view of the arena. Is this live-screen always to be used?

JW Actually, the live screen will be an optional feature.

KO Moreover, the live-screen uses one more Model 2 board. Which means for the total set we are using three Model 2 boards.

Edge How many different robots does *Virtual-On* have?

JW There are eight robots to choose from with two additional bosses, but you can't play as them. There are ten different arenas as well. The game's difficulty changes according to the robot you choose. Beginners have to choose from two easy robots whereas advanced players get a wider variety.

Edge Will there be a Saturn version ?

JW The decision is nothing to do with us, but I believe Sega's management have decided to convert, yes. However, the development team should be different because arcade teams are not used to developing with Saturn tools.



The effects required in *Virtual-On* are pushing Sega's two-year-old chipset to the limit. Here the camera pans in on a defeated opponent

Edge Will the Saturn version link-up?

JW Nothing has been decided yet, but discussions are going on to find a playable solution.

Edge Finally, why 'Virtual-On'?

JW Only because it sounds good, to be honest. We wanted to do something on similar lines to *Virtua Fighter*, *Virtua Striker*, etc. Sega is famous for its *Virtua* series.

Desert War





Desert War introduces mild strategy elements to a jaded genre

Developer:	**Jaleco**
Release date:	**Out now**
Origin:	**Japan**

In arcades across Japan, amongst the latest graphically stunning 3D titles, a few 2D shoot 'em ups still manage to cling to existence. Joining this desperate rank is *Desert War*, a standard vertical scroller with a few twists to give it a little lift above its competitors.

The player controls a helicopter through a number of missions (destroy a truck convoy, destroy a missile launcher – the usual stuff) and must of course avoid the enemy onslaught coming in the opposite direction. The game is notable mostly for its rescue and fuel-up elements. In each location, dozens of allied soldiers can be picked up and dropped off at bases or level endings for bonus points. The catch is, whenever the helicopter touches down to either pick up or drop off soldiers, it is extremely vulnerable to enemy fire – introducing a strategic element very similar to Archer Maclean's classic 8bit title, *Drop Zone*.

Another 'challenging' element is the fact that the helicopter carries a finite amount of fuel, so the player must pick up fuel barrels (or soldiers oddly enough) to continue. This makes picking up objects, and placing the helicopter in jeopardy, an obligatory experience: again, adding strategy to the basic genre game plan.

Although nothing particularly special or innovative, *Desert War* is entertaining and playable. The pick-up aspects of the gameplay do add to the standard shoot 'em up scenario (with dual helicopter co-operation being another nice touch), but it could well be too little, too late.





While similar to the Toaplan classic *Ultimate Tiger*, Jaleco's game is distinguished by huge heli sprites

The way games ought to be

Hi-octane games theory by Chris Crawford



Number 1: Networked Interpersonal Games

In the first of a series of essays discussing the future of videogaming, game idealist Chris Crawford talks of a world where game enemies are living humans, not computer-controlled foes

Perhaps the most exciting aspect of networked games is their ability to provide interpersonal interaction. I have often complained that traditional computer games are always about 'things' (pick that up, go there, use this, and so on) and not people – and this shortcoming has held back the development of the medium. The difficulty, of course, lies in the problems of artificial personality and personal expression. Sure, you could come up with a program capable of understanding 'I love you', but how about 'Who was that man I saw you with last night?' – especially with its manifold interpersonal implications.

The problem of automating interpersonal interaction, of coming up with artificial characters that really work, has been attracting attention for some time now, but the sad fact is that we really haven't cracked the problem, or even come close. My own work in this field has made much progress, but it has taken three and a half years, and I still don't have a commercial product.

The people in the networked games biz toss their heads and laugh, 'So what? Who needs artificial personalities when we can have the real thing? And no computer model will ever rival the richness of human interaction!'

They're right on all counts. Moreover, they have another advantage: when you use the computer to connect humans rather than simulate them, you save lots of resources. My software uses gobs of RAM and zillions of machine cycles to simulate the most rudimentary of human behaviour. Network people don't have to write monster software to handle these problems; all they have to do is ship bits between players. What could be simpler?

But there are some drawbacks that have so far crippled the network designers, preventing them from realising the potential of this medium. In this essay I hope to address some of these killer problems and discuss strategies for solving them.

No computer model will ever rival the richness of interaction

Dropout

This is the worst of the problems. Imagine yourself in the middle of a hot game. Derek has just made a move on your girlfriend; your kid sister has just informed you that she's pregnant, but will not reveal the father; and Vanessa has just announced an attempted hostile takeover of your oil company. Things are really cooking – when suddenly Derek announces that his wife is calling him to dinner, and drops out of the game for the night. Because he's playing a crucial part in the drama, the whole game is frozen. The problem is compounded by the number of players. The more players there are, the greater the chance that a single-player dropout will shut down everything.

This problem, of course, is not limited to interpersonal games; it has been around for a long time. I recall a story from a defence department computer simulation that illustrates its severity. The simulation linked up commands from all over the country in joint wargames. I saw a videotape of one such operation, an amphibious invasion. A helicopter had just ferried some troops ashore and had just returned to the troopship to make another pickup. It settled down on the landing deck of the troopship and cut its engines. A moment later, a line defect caused the loss of connection with the naval base controlling the troopship. Because the network used distributed computing, the connection triggered the loss of all units controlled from that station. The troopship suddenly disappeared from the simulation. The helicopter was now hanging in the air, with no power to its engines. It fell into the sea and was treated as a casualty.

The truth is, there is no way to insure players will remain in a game they have begun. Some of them will certainly drop out before the game is completed, and if the role they played was crucial, then the game will collapse. What can be done about this problem?

I know of four basic approaches to this difficulty: player replacement, non-crucial players, reduced probability of dropout, and bridge artificial personality.

One: The first strategy is to immediately replace the missing player with another human. Presumably there will always be a steady supply of players; all the network need do is hold incoming players for a moment to see if any existing slots have opened up; if so, then the incoming player is placed into the existing game.

The problem with this approach is that it drops the new player into a slot he know nothing about. Without knowing the interpersonal history, how can the player appreciate the subtleties of the interpersonal situation? How can he know that the character he is playing has been a two-timing, double-dealing, low-down skunk for the last two hours, and that's why everybody hates him? And consider the experience from the point of view of the other characters. Here's a character who for three hours has followed a consistent course of action: he's a snake. Then suddenly, the character is transformed into a teddy bear who wants nothing more than to be loved. This isn't a plot twist; it's a plot disjunction. Lastly, player replacement cannot always be counted on to work. There will still be times when there just isn't anybody available, in which case the game has to shut down. Thus, player replacement does

not provide us with a satisfying, reliable solution to the problem of player dropout.

Two: Another approach I have heard about attempts to reduce the impact of any single player on the overall game. One such case involved a trading game in which characters engage in bidding for commodities. If one player drops out, then the market isn't much affected. Another variation of this strategy makes the player a voter in making crucial decisions. This strategy eliminates the problem by eliminating the significance of the player. It no longer matters what you do, because the game can chug along just fine without you. I don't see much value in this approach; it robs the player's actions of meaningfulness. Who would care to play a game in which your own actions (or even your very existence) don't really matter?

Three: A third approach is to reduce the probability of dropout, either by reducing the duration of the game or by making the game turn sequenced with long intervals between turns so that players can be certain to get their moves in. In the former case, the game is kept to 30 minutes' duration or less; this reduces the likelihood of player dropout. Moreover, it insures that, should somebody drop out, little is lost. The players can simply start over with a new game. The difficulty with this approach is that it limits the richness of play. Short games just can't get into interesting territory. A great many human relationships derive their impact from the context in which they take place. You need to build up some interpersonal history before your interactions with others can become deeply interesting.

The time-sequenced approach often breaks the game down into daily turns. All the players read their news of the day and then enter their moves for the next day. At 5am the central computer processes all the moves and posts the results. Because players need only check in once per day, the likelihood of their missing a move is much reduced. On the other hand, this solution breaks up the interaction into a slow-moving dance of discrete steps. Seducing a cute chick one box of candy at a time could take months. While it works reasonable well with certain types of strategy games that require lots of thought with few moves, it cannot deal with the more intense interaction of relationships.

Four: The fourth approach to player dropout involves the use of what I call 'bridge artificial personality'. The idea is to use artificial personality to bridge the gaps created by player dropouts. By noting a player's moves, the computer can build up a model of the player's personality should the player later drop out, the computer can turn on the artificial personality to take over for the player. While the artificial personality would never be as rich or interesting as the real thing, it might be good enough to cover the gap temporarily.

The downside for bridge artificial personality is that this technology will require a considerable amount of work to create. However, such technology, once created, could be adopted to a wide variety of network products. It would also give us a new twist on the Turing test.

Timing

Another difficulty with networked interpersonal games comes from time zone differences. Most people are going to play games during their off hours, typically 7 to 10pm on weeknights.

If a particular player prefers to play a nazi, always shouting, 'Heil Hitler!' what can be done to protect normal players?

Unfortunately, this window is too narrow to permit people from widely different areas to play at the same time. Indeed, even within the continental US this presents a problem: the people on the east coast are leaving the network as the people on the west coast join. When we throw in players from Japan and Europe, the problem becomes insuperable. There is simply no way to bring large numbers of players together from all over the globe at the same time.

Of course, if the game is designed for offline interaction, using some sort of delayed response or turn sequencing, then this problem vanishes, but human interaction doesn't work like chess. Mood is just as important as strategy, and it's really hard to maintain a mood over a 12-hour time gap.

It's my belief that there is no good solution to this problem. Partial solutions can work, however. An interpersonal game could be set up with mostly west coast players, plus one person from Japan – in the evening on the west coast it's still morning in Japan. Similarly, east coast players could play mostly among themselves, with the game spiced up with west coast players (a three hour difference) or European players (a five hour difference). The trick is to have most of the players from one time zone meeting at a convenient hour, and a few adventurous players from other time zones showing up at an inconvenient hour.

Dramatics

Still deserving some consideration: how do we ensure the game retains sufficient dramatic content? The problem arises from the possibility that the players will fail to do interesting things causing the game to dissolve into boredom. Or perhaps they'll engage in overdramatic nonsense – dashing from murder to seduction to dragons to space aliens. As yet I see no decent solution.

Nazis and dorks

Since the players provide so much of the game's content, quality control of participants is crucial to the overall entertainment value of the game. But how do we exercise quality control over the people who are paying the bill? If a particular player prefers to play as a nazi, constantly shouting, 'Heil Hitler!', what can be done to protect the more normal players from this person's bad taste? In the same fashion, if one of the players is simply a dork, how can other players be asked to cope with him?

This is a delicate problem, because it involves evaluation of the personal merit of individuals, but it is not a new one. We all have to organise our social lives in ways that maximise the probability of running into interesting people and minimise the probability of running into unpleasant people. When was the last time you stopped by a bowling alley, or a discotheque, or a square dance hall, or a Grateful Dead concert? In each of these social gathering places, you have a pretty good idea of the kind of people you're likely to encounter. Nobody will come right out and say that all Grateful Dead concert-goers are drug users, but

Continued next page

you'd have to be awfully naive to be surprised if somebody offered you a joint while you were there. By the same token, it would be crass to say that all square dancers are older people with conservative values, but if I wanted to socialise with such people, a square dance would be a great place to start.

Thus, we all know lots of rules of thumb about where to encounter what kind of people. We use that information to avoid some places and seek out others. But such information is not yet available about network sites. Indeed, if there's any generalisation you can make about those who frequent networks, it's that they're probably undersocialised male dorks. Not very promising.

Fortunately, there are some things we can do about this problem. The best solution is to introduce a 'player profile' that rates players in a variety of dimensions, such as imagination, consistency, romanticism, team-playing, anti-social attitudes, rudeness, and so on. Every time a player completes a game, his co-players are asked to rate him in each of the dimensions. Once a reasonable set of player profiles have been worked out, specialised games can be set up that have certain personality profile requirements associated with them, e.g., 'to be allowed to enter this game, you must have a romance rating of at least six, and a rudeness rating of less than two.' Even this scheme, however, is vulnerable: a group of anarchist punks could play a series of games with themselves, altering their personality profiles so that they could gain entry into whatever game they chose, where they could wreak havoc.

Our problem is that the normal methods of enforcing group expectations on individuals break down in the network environment. If I were to wander into a gay bar and loudly start telling ugly jokes about homosexuals, I'd be asked to leave, or perhaps I'd get beaten up. But there are no such options available in a group environment online. My guess is that, until network environments provide the majority with the power to enforce sanctions against individuals, social groups will not be able to prevent anarchist troublemakers from intruding on their fun.

Group Size

Another issue in network interpersonal games is the problem of establishing the ideal group size. Social interaction is a tricky business. If too few people are involved, the interaction becomes inflexible, while if too many are thrown together, the group becomes socially unmanageable. Unfortunately, the ideal size depends largely on the people involved. Some groups will function quite well with one or even two dozen members; others will fall apart with more than five. Unfortunately, there's no way to predict the outcome of group size. My guess is that we'll have to start out with the classic seven-person interaction and then figure out ways to modify it.

Free text or regulated inputs?

The question of free text or regulated inputs is a crucial and difficult one. Should the players be allowed to interact via freeform text or should communication be regulated through a standard interface language? The former approach gives them the freedom to pursue any options whatsoever, to interact in a wide variety of ways, but it suffers from the ability of troublemakers to mess things up for others. In general, I see this problem as minor. However, the regulated input approach has the additional strength that it can allow the computer to control some form of reality. That is, regulated inputs can permit the computer to keep track of variables and ensure that actions are in accord with some notion of reality.

Of course, free text and regulated inputs are not mutually exclusive; it's easy to include both the same product. The issue is more a matter of how much of the interpersonal interaction takes place through free text and how much goes through regulated inputs. A good example is provided by *Habitat*, which mixed some free text with some regulated input. The reassuring result was that social groups formed and began to establish higher rules of social behaviour.

Who would want to play a game as the ugly poor kid without any GCSEs?

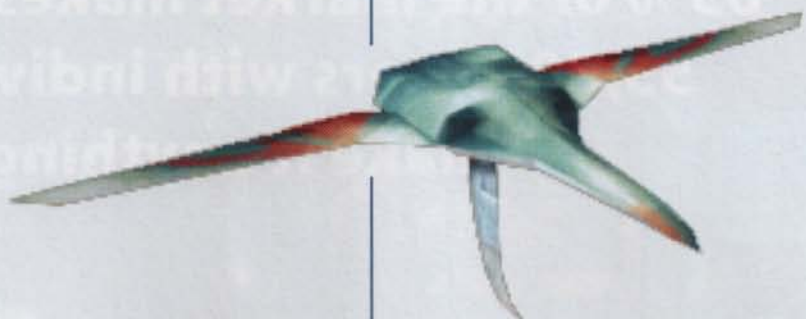
Egalitarianism

This is a particularly thorny problem. The audience would expect to be treated as equals, yet much of the richest social interaction arises from the inequalities of the human condition. Some people are richer, some people are smarter, some people are prettier. These inequalities play on human foibles to generate social conflict. Yet who would want to play a game as the ugly poor kid without any GCSEs or A levels? How do we reconcile the natural egalitarianism of the customer ('My money is just as green as his') with the dramatic necessity of inequality?

I think this problem can be resolved through a kind of karma. The very first game you play, you have no karma at all, and so you enter the game with a weakling character. However, your overall goal is to improve your karma. Thus, even though you play as an ugly, dumb, poor nobody, if you play well (whatever that means), your karma increases. The next time you play, you'll be given a character who's not quite so ugly, so dumb, or so poor. If you play long enough and well enough, you'll play as one of the 'Beautiful People'. Perhaps you'll be a fabulously wealthy, ravishingly beautiful young CEO of a major software company. Perhaps you'll get to be a really nasty bad guy with all sorts of exciting opportunities for villainy – and if you're a truly fine villain, why, your karma increases!

What this suggests is that players should be rated, not by any absolute scale of direct personal achievement, but rather by a scale of dramatic success. In other words, we don't measure a player's performance by how much money he acquired, how many 'Fame Points' he picked up, or how many 'cute chicks' he bedded. Rather, each character should be assigned a set of dramatic goals and evaluated on how well he met those goals. Thus, Lovely Nell might be rated on how well she met and married Mr. Right, while Snidely Whiplash will be judged on how many girls he tied to the railroad tracks. Lassie will be judged on how many times she gets little Timmy pulled out of the well, and Captain Kirk will get points for every time he disables a rampaging computer by making it think about a logical impossibility. In other words, you get karma points for being true to the character you play.

This innovation in gameplay has the additional merit that it encourages players to spend more time on your network, building up their karma so that they too can play as Scarlett O'Hara, or JR Ewing, or Spock. What a delightfully commercial concept!



Neon

Neon software is the newborn wunderkind of the ever-innovative European games scene. **Edge** jets to Frankfurt in search of hi-tech videospiele

Viper (above), ***Vanished Power*** (below) and ***Tunnel B1*** (bottom left)



Format:	**PS/Saturn/PC**
Publisher:	**Ocean**
Developer:	**Neon**
Release date:	**TBA**



Continental Europe is well known for producing top class coders… and then losing them. LA-based Scavenger, famous for its *Into the Shadows*, *Scorcher* and *Amok* projects, is formed by scandinavians, and Factor Five (formerly Germany's largest independent development house) is soon to move to California. The fact that these people are now working in America is a testament to the quality of programmers reared on demos and shareware products, but it is also a sad indicator of Europe's inability to exploit its own resources.

Neon, however, are determined to stay put. It could have been a disastrous decision. **Peter Thierolf**, one of the company's founder members admits that Germany is not the easiest place to develop software, 'There are a lot of small companies that will tell you anything to get you to produce a game and in the end, they

just don't pay. There are some companies that are serious, but you have problems if you want to produce console games. Companies here in Germany do not have good international connections.'

Despite the odds, Neon have come through. They now have three games on the go, a healthy, recently renewed four-game deal with Ocean, and the chance to make an impression on the games market while staying put on German soil.

Despite the fact that they now look totally different, *Tunnel B1* and *Viper* (working titles) were originally conceived as different sections of the same game. As **Jan Joeckel**, another Neon founding member states, 'In the early days we planned to make a big game where all sorts of different parts were included – you could fly a helicopter through a city, watch a movie sequence, then drive through a tunnel.' When the product was pitched to Ocean the producers decided there may be enough for two separate and entirely divergent games. Although possibly motivated more by financial than aesthetic motives, this looks to have been an excellent decision.

Out of the two, *Tunnel B1* is furthest into the development process. Neon have described it as a cross between *Descent* and *Wipeout*, with the location types and game play of the former mixed with the speed and lavish graphical style of the latter. This description appears exceptionally accurate – the player controls a hovering space ship through a series of labyrinthine tunnels and subterranean complexes. Each complex is modelled around a different graphical concept (sewer, factory, etc) and filled with enemy droids and tanks which can be destroyed with a huge variety of weapons. Out of the player's armoury, the homing missile looks particularly impressive – it can be locked on to specific targets and then released, so that it snakes around obstacles on the way to its allocated victim.

Apart from enemy vehicles, tunnels are also loaded with other traps and obstacles such as laser alarms which bar entrances and, if passed, alert enemy forces to the player's presence. The laser bars are created from transparent polygons, a favourite with Neon. A similar graphical effect is used to create the smoke which follows missiles in both *Tunnel* and *Viper*.

At the moment the plot is not particularly clear. Apparently the game will



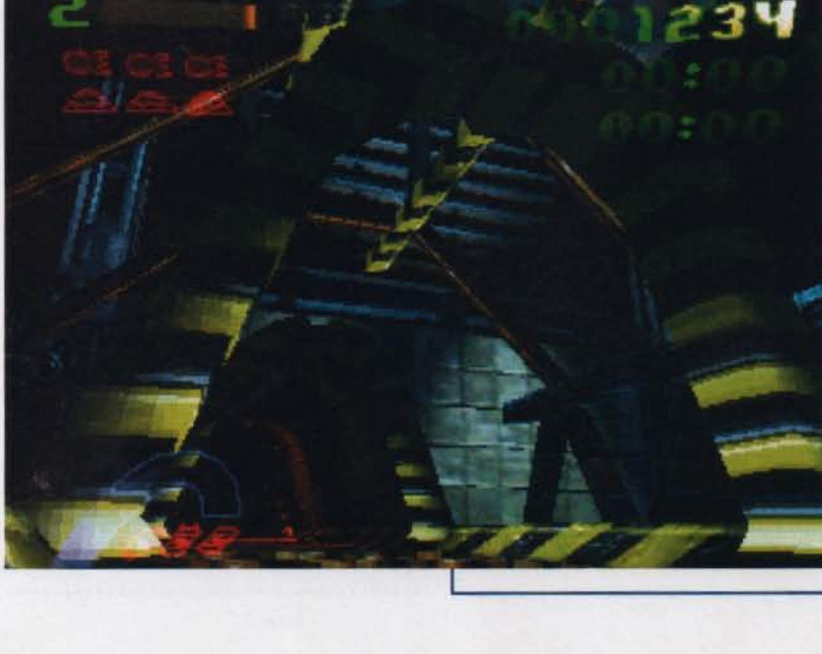


'We use optical effects which have previously only been seen in pre-rendered sequences,' asserts the Neon team



The emphasis placed on visual style in *Tunnel* is obvious. Each of the game's locations is atmospherically dark and arcane

Neon have described *Tunnel* as a cross between *Descent* and *Wipeout*



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Neon (top): Boris Triebel, Peter Thierolf, Jan Joeckel, Michael Buettner, Jan Rathje (freelance artist) and Antony Christoulakis

Continued

be split into a series of missions each with a different set of locations and objectives. On some, the player merely has to race through a linear location to destroy the end reactor, on others exploration is involved. Each location will also include several power circuits which act as sub-objectives – when destroyed they disable forcefields allowing access to secret areas.

The story may be vague, but one thing is certain, *Tunnel B1* is visually stunning. The tunnel systems are beautifully constructed, stylish and atmospheric, while the 3D engine propels both the player's craft and the various enemies around the screen with amazing speed and fluidity.

The incredible speed of the game is perhaps down to the engine's aptitude for claustrophobic, internal environments. As Peter points out, 'In *Wipeout*, the locations are very large – when you perform a jump, you can turn around and see everything. This would not be possible with the *Tunnel* engine which is designed for connecting sections. There are open sections, but they are handled like a tunnel. If you jump, you will not see buildings in the distance, you will see darkness. Our engine is not the god of 3D routines.'

Jan Joeckel is quick to point out, though, that because the tunnel engine is tailored



The 3D engine used in *Tunnel* and *Viper* has been designed for speed. It doesn't draw in distant objects, but then, it doesn't have to



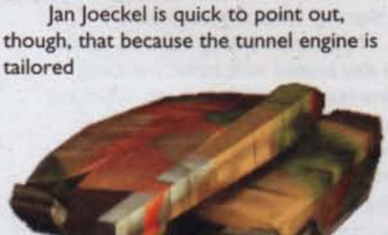
The tunnel systems are stylish and atmospheric, while the 3D engine propels both the player's craft and the various enemies around the screen with amazing speed and fluidity

specifically to a certain environment, it can do things that other game engines cannot. '*Wipeout* has a clean, flat look absent of much lighting. There are lighting effects they cannot do with *Wipeout* that we can do with *Tunnel*.' Indeed, *Tunnel* can support any number of light sources in any one environment, meaning some incredible effects can be achieved.

These effects are easily visible – laser blasts light up whole sections of the tunnel wall in a dazzling display of pyrotechnics and ceiling lamps produce glare on the cockpit visor as the player speeds beneath.

The groundwork has definitely been laid down for a superior title. Hopefully, by the time *Tunnel* is released it will contain some stimulating gameplay to match its advanced 3D engine and beautiful graphics.

Viper is just as visually impressive as its counterpart, but moves away from the confines of tunnel networks and into the nocturnal airspace above a skyscraper-filled metropolis. The game is basically a flight shoot 'em up in a similar vein to *Thunderhawk 2*. In *Viper*, however, there is only a single view with the player's helicopter





***Viper*'s hostile skies are filled with enemy craft of varying intelligence and ability. Tanks will also be present to spice things up**

portrayed by a small polygonal model in the centre of the screen. This is by no means a bad thing. The helicopter looks almost real as it swoops and banks to avoid enemy craft.

Flying above the detailed skyscrapers is an incredible experience – the cityscape, dotted with lights, is very reminiscent of Bladerunner and Neon plan to accentuate this with some building tops spouting flames into the night sky. Neon are also working on the possibility of flying between the buildings, which should look amazing.

As with *Tunnel*, there will be masses of weapons to choose from, including homing missiles and smart bombs, with truly incredible explosions accompanying impact. When an enemy craft is hit, a shockwave erupts from the contact point and radiates across the sky.

At the moment, Neon are concentrating on *Viper*'s graphics. **Michael Buettner**, who was previously working on



The gigantic explosions in *Viper* are amongst the game's most impressive features, contrasting brilliantly with the night setting



Flying above the skyscrapers is an incredible experience – the cityscape, dotted with lights, is very reminiscent of Blade Runner and Neon plan to accentuate this with some building tops spouting flames into the night sky





The early screen shots do no justice to *Viper*'s stunning nocturnal cityscape. Bladerunner is instantly brought to mind

Vanished Powers, has moved to the *Viper* project to work on the visuals for the game's proposed canyon level – a favourite location with 3D shoot 'em up developers.

Even at this early stage, *Viper* really does look as though it will be something special. As with *Tunnel*, all it needs now is a game to go with the graphics.

Vanished Powers is the odd man out in Neon's software canon – it's not using that original engine, it's not proper 3D and it's being developed on the PC first.

Although the game is an isometric RPG-style arcade adventure this was not the only graphical option open to Neon, as Thierolf states, 'We wanted to create huge 3D stages so we had three possibilities to choose from: realtime 3D graphics, isometric perspective or the parallel perspective used in games like *Zelda*.'

Continued next page





The helicopter must avoid the gantries and walkways that link buildings (top). It must also avoid, or destroy, enemy craft (bottom)

Continued

The player controls an adventurer who is seduced by a goddess, tricked into promising to search for her lost magical powers and then cast into another world where she believes they have been taken. The storyline is standard RPG fare with middle-earth monsters (around 60 different types), magic, sword fighting and, as usual, fighting and magical abilities increasing with gained experience. Although the game sounds linear, the programmers deny the players main objective will be to search for the exit to each level. '*Vanished Powers* is story-based. The scenarios are very different and you have lots of things to discover – the game's world is very vivid.'

Graphically, *VP* looks exquisite, with a visual style similar to *Crusader*, as is the control system – in both games the player can make his character jump, fight and run.

Vanished Powers is much closer to completion than its stablemates and, in gameplay terms, it couldn't be more different, indicating the diversity of Neon's projects, even when two are based on the same engine. This should stand them in good stead to succeed without following those dollar signs west. **E**



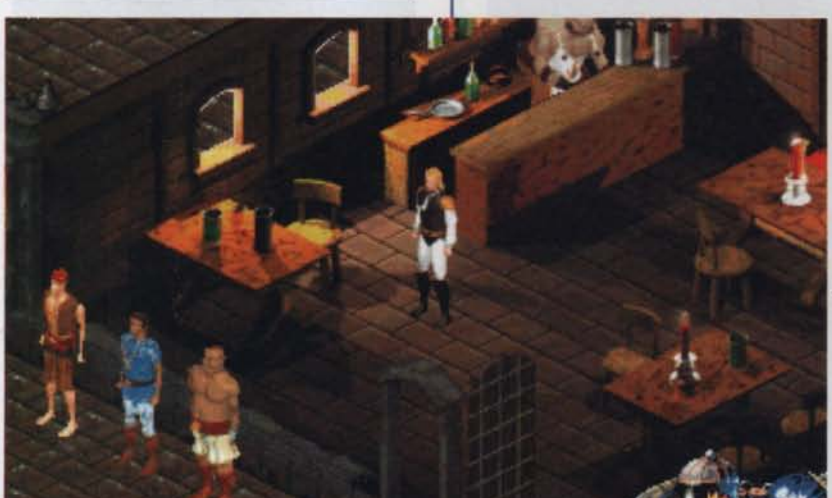
The player appears to have reached a dead end (above), but the ferryman is on his way. Don't pay before you get to the other side





VP*'s isometric display works perfectly on the PC. The bar scene (below) is very reminiscent of the rebel base in *Crusader

***Vanished Powers* is story-based. The scenarios are very different and you have lots of things to discover**



Neon's history

Neon was founded in 1994 by a group of seasoned 8 and 16bit programmers who, while working for several smaller companies, were responsible for dozens of C64 and Amiga titles.

Their first project together was *Mr Nutz*, a cutesy Amiga platformer very much in the *Sonic* mould. A video of the game was pitched to several companies at the Spring '94 ECTS and, out of all the offers they received, Ocean's was the most attractive. As Peter Thierolf explains, 'Ocean were the only company that offered to produce the game on a console, which we were very interested in.'

At the same show, Neon also pitched a few game ideas to Ocean's then development director, Gary Bracy. He was unimpressed, so Neon went back to their hotel room, phoned the rest of the company in Germany and came up with some brand new ideas. When they returned to the show, they had the blueprints for what would become *Vanished Powers*, *Tunnel* and *Viper*.

The original six members of Neon now employ another dozen coders and artists and the company is planning to convert *Viper* and *Tunnel* to Saturn, as well as *Vanished Powers* to PlayStation. Expect more details soon.

F1

PlayStation enters its second lap of honour as SIE (formerly Psygnosis) get to grips with the vagaries of Formula One racing







***F1* is one game that does not waste its official license. It includes all the tracks, teams and drivers from the '95 Formula 1 season**

Format:	**PlayStation**
Publisher:	**SIE**
Developer:	**Bizarre Creations**
Release date:	**July 1996**
Origin:	**UK**





Bizarre Creations love accuracy. Car design and handling in *F1* has been accurately based on the real thing

Just two months into 1996 and it already looks as though the videogame industry's love affair with motor sports is set to continue. *Rally* is out, *Revolution* is here and Psygnosis (aka SIE) are soon to be back in the fray with *F1*, an officially-licensed formula one sim. The game's developers, Bizarre Creations, are claiming a level of realism never before achieved in a car sim. In this case, though, it could be more than hot air.

Attention to detail would appear to be the key selling point and Bizarre have definitely been doing their Formula 1 homework. The car dynamics are apparently accurately modelled on the reactions of a real F1 vehicle, with all values included into the simulation taken from actual car measurements. Hopefully this will mean a continuation of the realistic handling already seen in the likes of *Sega Rally*, without losing gameplay.

In terms of circuit realism, the game looks to be similarly unparalleled. *F1* will include realistic weather conditions reflecting the season in which the race is taking place, as well as the country. In addition, the creators have taken their track data from accurate site measurements, and then transposed their findings into textured 3D circuit models, with some of the larger ones notching up 90,000 polygons.

This detail does not affect the frame rate, however; the slick 30Hz update putting to shame the equivalent F1 experience on the PC – *F1GP2*. Geoff Crammond's follow-up to the seminal *F1GP* fairly chugs along, even when running on a Pentium. If SIE can attain the same level of playability



The level of track detail looks destined to set a benchmark. Bizarre have included real live data from all the Formula 1 tracks in the game



At this early stage four views are available – behind the car (above), up and behind (right), distant (far right) and camera view (below right)







The car dynamics are accurately modelled on the reactions of a real F1 vehicle, with all values entered into the sim taken from actual cars

and accuracy that Crammond's masterwork is destined to achieve, *F1* could be the must-buy racer of 1996.

Stressing the immediacy of the game, *F1* can be played as a straight-forward arcade racer without all the sim-style stuff (pit stops, tyre selection, downforce settings, etc) getting in the way. Alternatively,a selection of sim elements can be chosen from the full list on offer – it's up to each individual player to decide. Whether this gradable approach will be successful has yet to be seen. Despite the fact that most of *Indy Car 2*'s more complex options could be turned off, the car still remained incredibly difficult to control.

Away from these uncertainties, Bizarre Creations have got one thing definitely correct: for once, gaining an official license seems to have been more than a cosmetic gesture. In *F1* it has allowed the designers to employ and include all the rules and regulations pertaining to Forumal 1 driving – including the flag system, car regulations and, best of all, racing etiquette – which should impress sim-heads everywhere. Also, such concepts as aerodynamics and tyre composites will be explained in the game, giving players a unique insight into the workings of the sport. Impressively, the license has also allowed *F1* to feature all 17 tracks, all 13 teams and all 26 drivers.



Of course, despite all the realistic car handling and accurately-modelled courses, *F1*'s real coup de grace is the inclusion of Murray Walker as in-game commentator. No more will motorsport fanatics have to wait until Sunday to hear this man's classically incoherent ramblings – with *F1*, they can enjoy them everyday of the week.

Doubts about commentary aside, *F1* is shaping up to be a serious contender. It is certainly brimming with interesting features, and still manages to find space for that vital



but so often overlooked racing game element – decent AI routines for opponents. Apparently, each driver has his own personality, aggression and driving style – just like real life (apart from the personality bit). If this title has a level of playability to match its depth and visual style, it can't really fail in a market obsessed with racing games.



Bizarre Creations seem to have secured official sponsors to appear in *F1*'s billboard graphics, such as Fosters (top) and Agip (middle)

Time Commando

Adeline's latest blends rendered 3D scenery with roaming beat 'em up action – but at what cost to gameplay?

Format:	**PC CD-ROM**
Publisher:	**Electronic Arts**
Developer:	**Adeline**
Release date:	**June**
Origin:	**France**





The pre-rendered intro is stylish and intense – typical of French design

America has gloss, Japan has playability, Germany has technical wizardry, but the French have style. Of all the French games ever created (of which, admittadely, there are few), each is guaranteed to be graphically ahead of its day. *Time Commando* is no exception.

Coming from gallic coders Adeline, the designers behind the revolutionary *Little Big Adventure* (**E**16), *Time Commando* displays a graphical quality that puts most other PC titles to shame. The scenery is a fully rendered, texture-mapped, hi-res (ie 640x480) landscape streamed off CD, which rotates and pans as the player wanders around. Unlike most streamed games, though, *TC* staggers the linearity. Depending on where the player wanders the appropriate background image is accessed and displayed, with the 3D characters placed on top. Unlike Sega's *V-Çop,* which pulls the player through the game relentlessly, some freedom of control is given to the player – this is not a game on rails.

The combination of freedom to explore and gallic design makes it inevitable, therefore, that a bizarre plot should surround the action. In the future



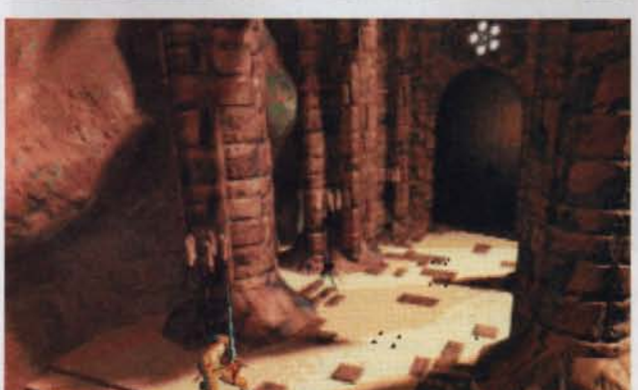




After warping to the prehistoric era, the time commando has to tackle Neanderthals (top), sabre-toothed tigers (left) and pendulums (right)







***Time Commando*'s weaponry advances according to the time zone he is in. In medieval times, for example, he can use swords and crossbows**









***Time Commando*'s wild west level has a distinctly Sergio Leone, spaghetti western, feel, with harsh red sands, rickety wooden buildings and hombres dozing in the sun**



computers have advanced so that the only thing limiting their awesome power is the speed light travels around the circuitry. To surpass this, computers are built with their cores placed within another dimension, where light travels faster. Surprise, surprise, this bit of hardware trickery malfunctions triggering a potential chain reaction that could destroy all life. To save the planet, the time commando is thrust into this temporal-displacement sending him through ten different time zones in his search to shut down the computer's core before it blows.

In this way Adeline have introduced era-sensitive weaponry to the basic beat 'em up engine. In the prehistoric land, clubs and rocks can be collected, in medieval Europe the weapons are crossbows and swords. Whether this variety will raise *Time Commando* to a class above beat 'em up, however, remains to be seen. In this very early stage of development all Adeline have to offer is an incredible realtime animation engine bolted onto some basic gameplay, reminiscent of System 8's classic, *The Last Ninja*, on the Commodore 64. But if Adeline can blend *TC*'s graphics and gameplay successfully, they could well uphold their reputation for creating mould-breaking software. **E**









The samurai level is encountered by ninjas and experts in martial arts. Note that the background graphics actually rotate and scroll as the time commando searches for the computer processor – the key to the game

Descent 2

The propensity for rehashing games and calling them 'sequels' is a common videogame scam. Will Interplay be found guilty?





The cockpit display contains two monitors showing the selected primary and secondary weapons systems. Weapons can be prioritised to the player's own specification, so when his favourite runs out of ammo, the next best is ready

Format:	**PC CD-ROM**
Publisher:	**Interplay**
Developer:	**Parallax**
Release date:	**March**
Origin:	**US**

Descent 2 enters a decidedly different market than the one its predecessor enjoyed almost a year ago. Back then, 3D shoot 'em ups were a rare breed. Now, apart from racing games and beat 'em ups, it's hard to find anything else.

Of course the programmers would hastily point out that *Descent* is more than just a *Doom* clone, because it allows the player to explore in true 3D. This element, perhaps the game's most outstanding feature, will be the one to set *Descent 2* apart from its more restrictive competitors.

But will *Descent 2* improve on, or offer anything fundamentally different to, the blueprints set down by the original? At first glance, it appears not. The storyline is virtually identical, with the hero of the sequel being ordered to clear alien robots from a series of mining planets. When played, the game itself also seems very similar to the original with dark, twisting mine passages, hovering enemy droids and that infamously complex control system.





***Descent 2* contains the usual selection of pretty FMV sequences**

Away from these initial impressions though, there are several significant areas of change. Most notable is the new guide bot: a side-kick droid which aids exploration and whose progress can be followed via a special cam. Also helping the player out are ten new weapons and an after burner option which increases the craft's speed.

To counter these benevolent features, *Descent 2* has the thief bot: a droid which follows the player and steals weapons from his craft. There are also 30 new, more intelligent robot enemies to contend with.

In itself, this sequel looks to be just as good as *Descent* and for those who could cope with the complex interface it will hopefully offer a similar challenge. The early demo certainly reveals some well-designed levels which fully utilise the craft's 3D manoeuverability.

Despite these new features, *D2* doesn't seem to offer much more over the original. The 3D engine is almost identical – a point which may cost Parallax dearly. *Doom* creator, id, for example, has recognised the threat posed by the showy 32bit consoles and has thus created a totally new system for *Quake*. Competing against such gems as *Heretic* and PlayStation *Doom*, it is questionable whether *Descent 2* on the PC has what it takes to make an impression. You can only rely so long on a singular flight control mechanism.







Each location is explorable in real 3D. Prepare for some stomach churning



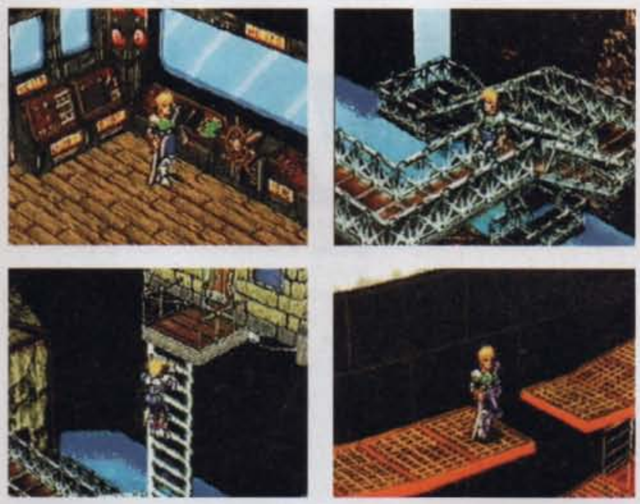
There are 30 levels in *Decent 2*, including the aliens' mothership

Dark Saviour

By blending platforming action with arcade adventuring, Climax hope to create a new genre for Saturn players



Dark Saviour's hero, Ryu, resembles one of the cast of Excalibur – he wanders around in full metal armour with sword and shield at his side



The Bounty Hunter scenario features a variety of locations. Clockwise, from top left: the boat, factories, abandoned cities and castles

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**Climax**
Release date:	**Spring '96**
Origin:	**Japan**

Until now, few arcade adventures or platformers have appeared on the Saturn, so perhaps Climax's decision to develop a game with elements of both was a clever attempt to corner the two markets in one foul swoop.

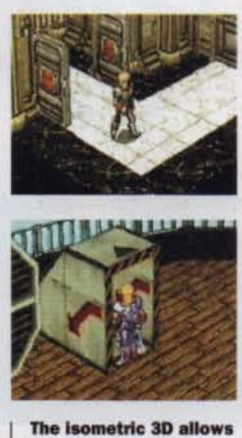
Dark Saviour shares the same isometric perspective from Climax's previous effort, *Landstalker*. The player controls Ryu Ya – a member of a crack squad of, oddly enough, bounty hunters. Ryu's mission is to find Bilan, an evil killer who has escaped the bounty team's custody on the way to an island jail complex. The rest of the squad will also be present in the game as non-player characters. These include Vanos, a half-human, half-animal mutant and, if that wasn't implausible enough, Kiwi, a cat beast who can execute incredibly high jumps.

Bounty Hunter takes place over a number of locations, starting with the boat from which Bilan escapes and moving to factories and abandoned cites. To take advantage of the diverse selection of scenarios, the gameplay includes sections primarily designed for exploration, as well as straight forward platform areas. Several moves will be available including jumping, climbing and moving obstacles. It will also be possible to manually zoom in and out on Ryu, so as to get the best view of the action.

The idea to combine these two, not totally dissimilar genres is an interesting one. If the gameplay matches the concept, *Dark Saviour* could be one to watch.



One novelty is the ability to zoom in or out on Ryu. In this way it is possible to examine locations from afar (left) or in more detail (right)



The isometric 3D allows for some beautifully detailed scenery

Spycraft

Format:	**PC CD-ROM**
Publisher:	**Activision**
Developer:	**In-house**
Release date:	**March**
Origin:	**US**

Incorporating FMV, the internet and real-life news stories, *Spycraft* has the potential to be an arresting thriller

When a new game is released calling itself an 'interactive experience involving FMV sequences' more often than not it turns out to be a couple of hours spent watching Mark Hamill and an extra from Star Trek: TNG wandering around a cheap movie set saying things like, 'the Quazgorg empire is on its knees, we must strike now while Garom and her soldiers are held up in the Swargian sector'. Fortunately, Activision are taking a new approach.

Spycraft is an international espionage thriller set in the post-cold war era. The player takes on the role of a rookie CIA agent who is given the job of preventing an assassination attempt on the Russian president. In this capacity, many aspects of CIA life, like observing and manipulating satellite data, locating missing agents and shooting people, can be tried out.

Various interactive sequences are interspersed with video sections, photographic arrangements and actual stock footage from the CIA. It all sounds interesting on paper, but these things often do. The real question is, what are Activision doing to create a playable game?

Well, it is clear that much effort has gone into giving *SpyCraft* an unprecedented level of detail and realism. Not only is the game based on a story by James Adams, a spy thriller author specialising in international intelligence and terrorism, but it has also been designed in consultation with William Colby (ex-director of the CIA) and Oleg Kalugin (ex major general of the KGB) whose life experiences have been written into the plot. Activision are also incorporating the internet and real news stories into the game.

Edge has seen several sections of *Spycraft* and they certainly seem more fun than those evident in many other FMV-riddled games. This is also an admirably ambitious project combining real life experts with hollywood actors and fictional scenarios. Whether these many disparate elements actually fuse into a coherent, engrossing game is yet to be seen. If they do, it will certainly be the beginning of a new era for the multimedia experience.





***Spycraft*'s many surveillance sections will allow players to pretend they're Harrison Ford in Patriot Games.**





The ex-director of CIA (above) and B-movie actors – a lethal combo





***Spycraft* mixes FMV and game sequences. The resemblance between the actor (left) and the photofit (right) is just a coincidence. Or is it?**

Company focus









Dark Stalkers (top right), Akio Sakai, head of consumer software division, Capcom (top left)
Super Street Fighter II Turbo (above), *Marvel Fighters* (bottom left)

Capcom

After a period of relative dormancy, Capcom's legendary status as a creator of classic games has been restored

For a company with such a revered arcade and console lineage, Capcom hasn't had it easy of late. While a history of rich, playable arcade games precedes it, the Osaka-based company has recently been suffering from the familiar Japanese problem – how to adapt. Negotiating the gargantuan rift that exists between 2D and 3D worlds clearly hasn't been an easy process for Capcom.

Recently however, it seems as if the company is pulling out of its period of redundancy. With a glut of arcade ports currently in the offing for PlayStation and Saturn, plus its most aspiring offering, the eery, gore-fest *Resident Evil* (aka *Biohazard*), the company is showing it has the ability to overcome any perceived drawbacks. **Edge** attended the company's consumer headquarters in Tokyo for an interview with the head of the consumer software division, **Akio Sakai**.



The latest in Capcom's vertical shoot 'em up stable is *19XX*, soon to be converted to PlayStation

Edge *Resident Evil* is one of the most violent games ever created. Is there a strong public reaction to violence in Japan?

AS Any games have the possibility to be criticised so it is necessary for games companies to control and limit violence themselves. The blood and gore in *Resident Evil* does make the game more dynamic, but it also causes a lot of problems… which is difficult to comment on. *Mortal Kombat* is very popular, so why shouldn't we put any violent scenes in our games? Ultimately though, we have to regulate violence in games as much as possible. We'll receive a lot of criticism if we don't.

Edge Did you use motion capture at all in *Resident Evil*?

AS Although we have a studio for motion capture, we didn't use it in that game. Instead, the coders studied books, videos and films to learn the movements of spiders and people, etc. [Incidentally, one Capcom artist allegedly scanned in a picture of a dead person's eyes to capture for the moribund look on the Zombie's faces!]. We're more likely to use motion capture in head-to-head fighting games. For example, we employed it in parts of *Street Fighter: the Movie*. That was the first of our games which exploited the technique, although we'll be using it more from now on – its much quicker.



Capcom's zombiefest, *Resident, Evil* gels *Alone in the Dark* gameplay with blood and guts

Edge The atmosphere and style of *Resident Evil* seem very reminiscent of western horror films. Were you inspired by them when designing the game?

AS Way back in the NES days we developed an RPG called *Sweet*

Ultimately, we have to regulate violence in games as much as possible

Home and it's from there where our inspiration comes. *Sweet Home* was an adventure set in an old mansion like *Resident Evil*'s.

Edge So the game is targeted at a higher age group than normal?

AS We are aiming this game at 18 year-olds in Japan, a higher age than Capcom usually aims at, and an entirely different audience. This is partly because PlayStation is supported by older people. We also want as big a market as possible for our games. If we create a game for a low age group

Continued next page

Company focus

there is little chance that interest in the title will spread to more mature players. However, if the game is aimed originally at that higher age, there is a good chance the interest will filter downwards.



Edge Will the game make it to Saturn?

AS We are considering a Saturn conversion but the machine's spec is not ideally suited. Technically speaking, it'll take us a long time to transplant the game. We'll come to a conclusion about that soon. Because Saturn is popular in the arcades, we guess its users are younger than PS owners, so this is a consideration, too.



Edge How easy is it to convert arcade code to Saturn?

AS It takes a year to convert perfectly. With *X-Men* we had to cut about a third of the animation frames due to Saturn's smaller RAM capacity.

Edge Do you think your 2D characters will translate well into 3D?



AS No way – if we develop new 3D fighting games we will probably develop new 3D characters. It may well become possible to produce a 3D Ken or Ryu if we can use a great deal of polygons on them but squarish shapes would spoil their present images. In our new game, *Street Fighter the Movie*, you'll see Ken and Ryu, but a 3D version won't be realised until we can use fewer polygons and the next gen machines' prices drop.

Edge Capcom has been quite slow getting into 3D games. What are the reasons for this?

AS Because we remained committed to the Super Famicom, which can't handle 3D, Sega and Namco got a headstart on us in



Akio Sakai, head of Capcom's consumer software division, wants the *Street Fighter* company to become as celebrated in 3D as Sega and Namco are now

the arcades. But now we will be concentrating on 3D for both home users and arcade fans. We hope to eventually compete with Sega and Namco, but with 3D arcade machines that are cheaper to make than their's [just as *Street Fighter II* was a aggressively-priced PCB]. However, we will not be abandoning our popular 2D animated style seen in *Dalkstalkers* and *X-Men*. We think of this type of 2D game as our own.

Edge What technology do you need to produce 3D games?

AS Generally, we've developed most of our 3D stuff with *Softimage* and SGI tools. Our programmers had a hard time to begin with, because of the introduction of this new way of working – it was like changing from CISC to RISC programming. We also spent a lot of time remaking/converting the software provided by Sony to general software that would help us. But we're getting used to it all now, so we can say that the problems associated with 3D development are decreasing. In fact, it's quicker than developing 2D games now.

Edge Regarding Capcom's decision to use Sony's hardware in the arcades [for *Toshinden 2*], are you using the same hardware as Namco's System 11?

AS Compared to Namco's board, the spec and functions are generally the same.

Edge Do plan to release lots of arcade games using the board?

AS We've actually started developing some arcade titles. *Toshinden* isn't one of our own in-house games, but we're in the process of developing our own games and not just beat 'em ups.



Saturn *Vampire Hunter* (the follow-up to *Darkstalkers*) continues Capcom's trend for lavish, cartoon-style graphics and classic 2D beat 'em up gameplay







***Bionic Commandos* (aka *Top Secret*), *Commando* (middle) and *Gunsmoke* (right) – all Capcom eighties classics**

Edge Don't you think people who have the PlayStation version would avoid *Toshinden 2* in the arcades?

AS Those who don't have the PlayStation version will be keen to play the arcade version, which also has a few unique features. For example, it's possible to fight against a lot of other players in the arcade. However, we realise that we won't be able to sell as many arcade units as copies of the Playstation conversion.

Edge Will you be developing for Nintendo's Ultra 64?

AS Yes, of course. We will develop games on U64 which take into consideration Nintendo's present market, ie children. However, that does not rule out the possibility of converting games like *X-Men* and *Resident Evil*. The machine hasn't been released yet so we don't know which age group Nintendo are targeting, but we are developing some completely original concepts for Ultra 64 at the moment.

Edge *Resident Evil*'s graphics and theme have more in common with the PC than the consoles. Why have you chosen to ignore the huge PC market?

AS As you might know, we produced some titles for the PC98 and Sharp X68000, but they only sold around 5,000 copies each in total, so we thought we wouldn't be able to do good business in this market. However, we expect the Pentium, and particularly *Windows '95* to catch on all over the world, including Japan. We're going to therefore develop some more games for the PC market throughout 1996. We've already begun converting *Resident Evil* to PC and, unlike PlayStation, we can use red blood, because we can give the game an 18 rating.

Edge The development of *Darkstalkers* for PlayStation has been done in England by Psygnosis. Why was this decision taken?

AS We had a lot to do so we asked Psygnosis to develop the game after SCE told us they would be able to finish the work quickly. We wanted to release it as soon as possible but they still haven't finished, despite our intention to release it in February. We could have perfected it ourselves.

Edge Which British games does Capcom most respect?

AS British game companies have produced a lot of software. Titles we have a lot of time for are mould-breaking concepts such as *Populous* and graphically intense arcade games such as *DKC*.

Edge What's the general Japanese opinion about UK development?

AS Compared to US software, British software has more chance of success in Japan. EA have produced some good titles with a lot of detail, but generally most European companies release better games than Americans. Europeans consider things like graphics and stories in more detail.

Edge Capcom has a very strong line-up of classic arcade games.

We're already converting *Resident Evil* to PC and this time we can use red blood

Are there plans to convert any?

AS Our development section has refused to do so because other companies have already written conversions. However, there is a possibility that it will happen. It will be a successful idea if we put three or four games on one CD and then sell it at a reasonable price. We're sure Namco will be doing well with its *Museum* CD. Now, if only you could convince our R&D department…

Edge 50 Power Players

The most powerful money men, the most inspired creative minds, the most ferocious boardroom tigers – **Edge** lists the 50 most important players in the videogames industry

Behind the plethora of games that get released every month lies a 16 billion dollar industry – bigger than the movies, bigger than pop music, and growing at an astounding rate. Yet it is an industry that is still relatively young compared to other mediums like television or music.

The secret to this explosive growth could lie over the next few pages, where Edge reveals the top 50 players in the modern interactive entertainment phenomenon. From programming geniuses to marketing masterminds, all have been influential in the constant evolution of videogaming. While this 'honours list' endeavours to provide a cross-section of the broad range of activities in the interactive entertainment industry, inevitably, many revered figures remain absent. (Apologies in advance...)

David **Braben**

Title: Founder & Managing Director
Company: Frontier Developments Cambridge, England
Career Highlights: *Elite* (1982), *Virus* (1987)
Resume: In 1982 games were either shoot 'em ups or, frankly, primitive text adventures. David Braben's (and Ian Bell's) *Elite* changed all that for good. It was one of the very first games to feature 3D graphics, but more importantly it challenged the definition of what a computer game was. *Elite* was a sprawling epic involving strategy, thought, space-trading, but relatively little shooting and very little text. It was a complete universe built in an 8bit world. Some videogame journalists believe *Elite* is still possibly the greatest computer game ever.



At the time, however, many software houses found it too challenging. It was turned down more than once because there were no lives to be lost, no score, and no obvious start, middle, or end. But come its eventual release for the BBC Micro, it was critically acclaimed from day one. It's since been released on 16bit platforms and there have been two follow-ups, *Frontier* and the appallingly bugged *First Encounters*.

With the move to 16bit came Braben's *Virus*, a critically acclaimed 3D shoot 'em up with randomly generated levels and intelligent aliens. Few 3D games have since equalled such gameplay.

Shigeru **Miyamoto**

Title: Head of Software R&D
Company: Nintendo Corporate Ltd, Kyoto, Japan
Career Highlights: Creator of *Mario*, *Zelda*, and *Donkey Kong*. Creative force behind *Pilotwings*, *F-Zero*, *Super Mario Kart*. *Mario* games have sold more than 115 million units worldwide.
Resume: He's the most successful game developer in history. He has a unique and brilliant mind as well as an unparalleled grasp of what gamers want to play. In *Mario* he has created one of the most popular children's characters ever. He joined Nintendo in 1977 and designed his first arcade game, *Donkey Kong*, in 1980. In 1984 he was asked to design a game for the NES. He went back to *DK* and pulled out the unlikely hero, a short fat mustached plumber called Mario, to star (with newly created brother Luigi) in *Super Mario Bros*. It was what the NES was invented for and helped establish the system as the most popular console in the world. *Super Mario Bros* games have so far sold 115 million units around the world. Miyamoto's other series, *The Legend of Zelda*, is also hugely popular. His latest Super NES game, *Yoshi's Island: Super Mario World 2* could well be his best ever and he's already working on Ultra 64 *Mario* and *Zelda*, that will hopefully be ready for the console's launch.



Miyamoto is arguably Nintendo's most vital employee, and it's certainly safe to say that the firm's success would never have hit such stratospheric levels without his input. A popular analogy is to describe him as the Steven Spielberg of videogaming, combining unprecedented massmarket appeal with almost unwavering critical acclaim.

Eugene **Jarvis**

Title: Game Director
Company: Williams
Chicago, IL, US
Career Highlights: *Defender* (1980), *Cruis'n' USA* (1994)
Resume: Having designed pinball tables for Atari in the mid-seventies, Eugene moved to Williams, got bitten by the *Space Invaders* bug and designed *Defender*, the firm's first-ever videogame. If he had done nothing else, he would still have warranted a place in any list of videogame notables – Jarvis reckons that in its time *Defender* has probably gobbled more than $1 billion, and it remains one of the most playable games ever to hit an arcade. Pity that Atari (bless 'em) have just sunk a ton of nails into *Defender*'s coffin with Jeff Minter's ill-conceived Jaguar update (see page 73).

In 1994, however, Jarvis added to his legacy with the launch of *Cruis'n' USA* – an underpowered but engaging homage to *Out Run*. He's currently overseeing the development of an Ultra 64 game by Williams' San Diego team, a game that is destined to become one of the key titles for Nintendo at launch. Jarvis is also currently working on a sequel to *Cruis'n'* which will hit arcades next summer (and probably Ultra 64 by Christmas '96). He has no plans to move over to home videogame development but his designs and concepts will no doubt be translated into some of the hottest games of the next generation.

Sid **Meier**

Title: VP Development
Company: Microprose
Hunt Valley, MD, USA
Career Highlights: *Pirates* (1983), *F-15 Strike Eagle* (1985), *Railroad Tycoon* (1990), *Civilization* (1991)
Resume: Meier was an original co-founder of MicroProse back in 1982, but has never made the move upstairs to corporate-ville. Instead, he remains a prolific developer of some of the best games in this veteran publisher's catalogue. Meier's first hit project was *F-15 Strike Eagle* (a title from which spun a series which has now smashed through the $1 million sales barrier). His most respected achievement, however, was the release of build-your-own-empire title *Civilization* in 1991 which still demands serious time from strategy gamers the world over. *Civ*'s 1994 sequel, *Colonization*, was also successful and *Civilization for Networks* arrived on shelves in late 1994.





Peter **Molyneux**

Title: Founder and Managing Director
Company: Bullfrog Productions
Guildford, England
Career Highlights: *Populous, Theme Park, Magic Carpet, Syndicate* and *High Octane*
Resume: Since its formation in 1987 Peter Molyneux's Bullfrog has earned a reputation as one of the most consistently innovative and imaginative development teams in the world. Its first title, *Populous*, created a whole new genre, the 'God' game. Standards have hardly slipped since – *Theme Park* was many critics' Game of the Year in 1994.

All of Bullfrog's titles have so far been published by Electronic Arts, and earlier this year the ties between the two were made permanent when the publisher bought the developer in a deal thought to be worth around $40 million. Peter Molyneux remains, however, very much the man at the helm.

Alexei **Pajitnov**

Title: Game Designer
Company: Spectrum Holobyte
Alameda, CA, US
Career Highlights: *Tetris* (1988)
Resume: For many people, *Tetris* is the most playable game ever created. One famous *Tetris* addict, a business man flying from London to New York, looked out of his window as the plane approached the Manhattan skyline and started imagining the right shapes to drop into the gaps. That's the grip *Tetris* has had on otherwise sane individuals since it was released on home computers in 1988, and on NES and Game Boy a year later.

Its roots can be traced back to the mid-eighties and to behind the Iron Curtain – when it was still firmly closed. Working at the Computer Centre of the Moscow Academy of Science, Pajitnov became interested in Pentominoes – geometric puzzles featuring interlocking T and L shapes. He set about creating a computer version and called it *T and L Shapes*. He distributed it amongst all his colleagues and it became massively popular throughout the Academy and, soon, in offices all over Moscow. Word spread to the West and it sparked the most desperate and protracted scramble for the rights to any game ever produced.

Nintendo, perhaps inevitably, won the day. *Tetris* has since become the most popular Game boy title of all time and undoubtedly helped the hand-held achieve its incredible popularity. Pajitnov now lives and works in the US where he is contracted to Spectrum Holobyte.

John **Romero**

Title: Co-founder and Game Designer
Company: Id software
Mesquite, TX, US
Career Highlights: *Doom* (1993)
Resume: As the designer of id's *Doom*, Romero has arguably done more than anyone to establish the PC as a truly all-round games machine. No longer is the PC considered a home for worthy flight sims or adventure games.

Doom was written around a breakthrough 3D graphics engine and, using first-person perspective, it placed players in as action-packed a combat game as has graced any console. It's impossible to calculate how many people have played *Doom*, as it was available exclusively on shareware long before it came to retail and is almost certainly the most pirated game of all time.

Retail versions are also available on PlayStation, Jaguar, SNES, Mac (*Doom 2*), and 32X. Ultra 64, 3DO, and Saturn versions are currently in development. Back on the PC there's already been *Doom 2* (1994) released at retail. A third and similar game in the series, Raven's *Hexen*, is available in shops. But the real excitement is building up for next year's release, *Quake*, which will introduce an all-new id graphics engine.

Dave **Perry**

Title: President & Lead Programmer
Company: Shiny Entertainment
Laguna Beach, CA, US
Career Highlights: *Earthworm Jim 1 & 2, Aladdin, Cool Spot, Global Gladiators*
Resume: An 'all-round nice guy', single-handedly responsible for some of the 16bit platform's finest hours, the rise of Virgin, and the renaissance of Disney's fortunes (well, almost). Gearing up for an assault on the 32bit world, he has gathered some of the most outstanding game creators the world has to offer (when he can get them off the beach). Recently sold out to Interplay for loads of cash.



Perry often seems to benefit and suffer from a game press who seemingly can't hype him or his products enough. Is all the hype justified? Well, probably not. But that's not the point, the fact is that the press and gamers love him. **Edge**'s opinion as to Perry's PR secrets? Always return phone calls, don't make promises you can't keep, and show a genuine interest in whomever you're talking to. Sounds easy? So how come hardly any actual PR people (let alone presidents and lead programmers) in the industry do the same?

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50 Power Players

Tim **Schafer**

Title: Project Leader, LucasArts
Company: San Rafael, CA, US
Career Highlights: *Secret of Monkey Island, Secret of Monkey Island II, Day of the Tentacle* and *Full Throttle*
Resume: For any company looking to enter the interactive movie scene, Tim Schafer has been making them for years. Except his are compelling, funny, addictive, challenging, *and* interactive. They also cost ten times less to make than the majority of FMV crap that's churned out annually.

Schafer got his break when LucasArts needed creative minds to work with SCUM, the proprietary language in which LucasArts graphic adventure games are written. Tim Schafer, who had recently graduated from college, was selected as a 'SCUM-let' (ie one who works with SCUM).

He began as an assistant designer working on *The Secret of Monkey Island.* Two projects later Schafer and Dave Grossman (another programmer) were allowed to build their own game. They created *Day of the Tentacle*, with Schafer being responsible for writing and design. Tim's first solo piece – 'I did it all on my own with about 30 other people' – was *Full Throttle* (scoring nine out of ten – see **E**22). He both designed the game and wrote all of the dialogue.

Tim & Chris **Stamper**

Title: Joint founders & Managing Directors
Company: Rare
Warwickshire, England
Career Highlights: *Killer Instinct, Donkey Kong Country, Knight Lore* (1983), *JetPac* (1981)
Resume: Rare is perhaps the only company in the world who could claim to be vital to the mighty Nintendo. So vital that Nintendo forked out millions to buy a 40% share in the developer earlier this year, ensuring continued support for all its formats.



When the Stamper brothers first entered the game business in the early eighties, it was as a publisher called Ultimate Play The Game, developing classic titles such as *Knightlore* for 8bit computers. But as the NES took off, the switched-on Stampers set up a new division, Rare, to reverse engineer the hardware and produce carts for it – even without a license. Nintendo initially frowned on such rogue activity but when it saw the end product it was impressed enough to make Rare the first western company with an official developer's license. The Stampers abandoned publishing, concentrated on development, ditched the Ultimate name, and established Rare as the whole company.

It has since produced more than 90 NES, Game boy or Super NES titles. There's no doubt, however, that Rare reached a new level of success in developing *Donkey Kong Country* for the SNES. This was a massive leap forward for 16bit gaming and has become the fastest selling videogame of all time. Global sales currently stand somewhere north of 7.5 million units. In 1995 *Donkey Kong Land* hit the Game boy and *Diddy Kong's Quest (DKC2)* appeared on the SNES early this year.

Rare was the first development house signed up by Nintendo for its U64 'Dream Team'. A new version of *KI* should be ready at launch.

Chris **Roberts**

Title: Executive Producer
Company: Origin
Austin, TX, US
Career Highlights: *Wing Commander* series (original published in 1989).
Resume: Flight sims are a large slice of the staple diet of most PC gamers. For many, however, *Wing Commander* kickstarted the PC's presence in the games industry. The game first appeared in 1989 and to date more than 2 million *Wing Commander* games have been sold worldwide. The latest version, *Wing Commander III: Heart of the Tiger* has already chipped in with more than 500,000 since its release just before year's end '94.

Roberts remains very much at the head of all *Wing Commander* development, and therefore in charge of one of the largest development budgets in the gaming world. *Wing Commander IV* is due out in March and it's a safe bet that it will be another top notch addition to one of the most enduring and respected self-created franchises in the gaming industry.

J W **'Wild Bill'** Stealey

Title: Chairman
Company: Interactive Magic
Raleigh, NC, US
Career Highlights: Co-founder and former chairman of MicroProse, and fighter pilot (!)
Resume: A software salesman extraordinaire who wallpapered software stores with MicroProse games and has most recently sold several hundred thousand copies of *Apache* – the first game from Interactive Magic.

A challenge over a videogame transformed General Instrument sales man/National Guard fighter pilot Stealey into a software entrepreneur. Stealey played videogames with fellow GI employee Sid Meier and, on one occasion, Stealey bet Meier 25 cents he could beat him at *Red Baron*. He lost. 'Fighter pilots,' of course, 'don't like to be out-bragged,' says Stealey, so when Meier said *Red Baron* wasn't really a great game, Stealey challenged him to make a better one. Meier created *Hellcat Ace* and the two men quit their jobs to form MicroProse.

A fan of flight, golf, and racing simulations, Stealey insists all his games feature 3D graphics. But does he want to dabble in RPGs and adventure games? 'Bite me, kick me, throw me from an airplane,' he says he'd prefer. 'There are other big companies that do those games perfectly well.'

Yu **Suzuki**

Title: Chief Manager, R&D Amusement Division
Company: Sega Japan
Tokyo, Japan
Career Highlights: *Hang On* (1985), *Space Harrier* (1985), *Outrun* (1986), *After Burner* (1987), *Power Drift* (1988), *G-LOC* (1990), *R-360* (1990), *Virtua Racing* (1992), *Virtua Fighter* (1993), *Daytona USA* (1994), *Virtua Cop* (1994), *Virtua Fighter 2* (1994), *Virtua Striker* (1995), *Virtua Cop 2* (1995)
Resume: The list of credits is incredible. Yu Suzuki and (most notably) his AM2 team are responsible for some of arcade gaming's finest hours. Although it was the likes of Namco and Atari who started the arcade phenomena, it is without question Sega who takes the credit for keeping it exciting since.



Suzuki is treated like a rock star in Japan, and rivals Nintendo's Shigeru Miyamoto in terms of following. He drives a Lamborgini Diablo and enjoys the lifestyle that his success has earned him. Often outspoken, Suzuki is never one to unnecessarily tow the corporate line ('Trying to program two CPU's has its problems,' he groaned back in 1994, during the Saturn conversion of *Daytona USA*. 'The two CPUs start at the same time but there's a delay when one has to wait for the other to catch up. One very fast central processor would be preferable').

But his track record enables him the freedom to say and do as he wishes. And, luckily for Sega, this has resulted in a lifeblood of consistently killer titles. *Virtua Fighter* redefined the fighting game. *Virtua Racing* offers arguably the best arcade drive to this day. *VF2* is the most graphically sophisticated arcade game in history. And Suzuki-san shows no sign of slowing down.

Will **Wright**

Title: Game designer
Company: Maxis
Orinda, CA, US
Career Highlights: *SimCity* and *Raid on Bungling Bay*
Resume: Will Wright was building robots as a 'serious hobby' and going to school on and off when a friend sold him an Apple II. His first game was *Raid on Bungling Bay*, a game in which players flew over islands and dropped bombs.

'I had developed this editor to make the islands, and I found I was having more fun creating the islands than playing the games themselves,' recalls Will. This led to more sophisticated editors which led to an interest in city planning. He set up a program to test his city planning ideas, 'a guinea pig, which later became the precursor to *SimCity*.'



It's been said that there have only ever been two novels ever written, and that every thing else is just a rewrite. The same maxim has been applied to videogames, and *SimCity* has to be regarded as one of the originals.

Hisashi **Kaneko**

Title: President
Company: NEC Corporation
Tokyo, Japan
Career Highlights: PC Engine, NEC FX, a $43 billion global enterprise, employing 148,000 people worldwide.
Resume: Sony and NEC may appear similar, but the difference financially is $1 billion. NEC is a huge corporation maintaining a network of 88 consolidate subsidiaries, 63 manufacturing plants, and 370 sales offices. The company manufactures and markets more than 15,000 different products in more than 150 countries. In terms of its global sales, this company ranks among the highest: second in semiconductors, third in computers, and seventh in communication equipment. Nothing to scoff at.

NEC produced the revolutionary PC Engine game system – a console which managed to steal a



part of Nintendo's market share. The almost redundant 32bit NEC FX, on the other hand, has enjoyed little success in Japan, seemingly lacking NEC's full support. But NEC's influence stretches far above and beyond its immediate videogame products. As a leading semiconductor manufacturer, the company's clout exists from the cradle to the grave of every aspect of computing.

Marty **Kitizawa**

Title: President
Company: SNK Corporation
Tokyo, Japan
Career Highlights: Many popular coin-ops including *Ikari Warriors* (1986). Neo-Geo (1990).
Resume: In 1990, SNK launched two Neo-Geo systems, the arcade Multi-Video System (MVS) and the Neo-Geo home cartridge system. Dismissing a similar Nintendo product (the Playchoice 10) as unsuccessful, SNK have proved that their six-year-old technology can still hold its own – even today new games are released for the arcade system to popular acclaim. In the home, success has been less evident with high cartridge prices curtailing the viability of the system for many years. Recently, the Neo-Geo lineage has just been joined by the latest CD version, the CDZ. New 64bit technology is planned for later this year.



Trip **Hawkins**

Title: President & CEO
Company: The 3DO Company
Redwood City, CA, US
Career Highlights: Founded Electronic Arts (1982). Founded The 3DO Company (1992).
Resume: Hawkins is a visionary. In 1982 he founded Electronic Arts and through faultless handling of the most creative people in the industry produced a string of quality products that put EA at the top of computer game development. But Hawkins had made a poor call. He'd seen Nintendo as an insignificant fad and had chosen not to develop on carts. He also hated the strict terms and conditions that console companies imposed on third party publishers. By 1990 the sheer size of the business he was shunning forced him to change his tune. The firm adapted brilliantly to the demands of the console audience and titles such as *John Madden Football* and *Desert Strike* established EA as one of the biggest videogame publishers in the world.

In 1991 Hawkins unveiled a new vision: 3DO. The intention was to establish a global standard for CD-based gaming. Hawkins insisted it would be an open platform for all developers and publishers, free from the restrictive licensing agreements that had irked him so much at EA. Despite incredible hype and huge ambition, 3DO has failed to grasp a mass market. Global sales stand at around 750,000, with 300,000 sold in the US. Matsushita acquired the rights to its successor, M2, due late 1996.

Tom **Kalinske**

Title: President
Company: Sega of America
Redwood City, CA, US
Career Highlights: Took on Nintendo and won – sort of.
Resume: When Kalinske joined Sega in 1990, he was said to have the best job in the industry – to try and beat Nintendo. If he failed, well – no-one beats Nintendo. If he succeeded, he'd have pulled off one of the great business coups of the eighties. He succeeded.



And he did it by getting in first, being ultra-competitive on price, offering upgrade paths, dragging videogaming (kicking and screaming) through the doors of ad agencies and introducing the world to *Sonic the Hedgehog*. Kalinske's Sega is generally considered to have taken a larger slice of the 16bit market than Nintendo at a time when the 16bit market went ballistic (late eighties/early nineties).

Sam & Jack **Tramiel**

Title: President (Sam) and Chairman (Jack)
Company: Atari Corp, Sunnyvale, CA, US
Career Highlights: Took over Atari (1984). Launched Jaguar (1993). Successfully negotiated a large legal settlement from Nintendo (early nineties). Successfully negotiated a large legal settlement from Sega (1994).
Resume: When Jack Tramiel bought Atari in 1984 from the Time Warner group, the videogame bubble had burst and the firm was haemorrhaging money. He steered the company from videogaming to home computing with the launch of the ST, a respected 16bit machine that enjoyed considerable success in Europe and, globally, in the professional music market. In the early nineties, with Jack ensconced in a more backseat role and his son Sam in control, the firm stepped back into the console market with the 64bit (ish) cart-based Jaguar.

The Jag is Atari's attempt to take on Nintendo, Sega (both of whom it has fought in legal battles over copyrights and alleged monopolistic business practices) and Sony in the next generation marketplace. While being held back by smaller financial muscles and a desperate lack of immediate third party software support, the Jaguar has nevertheless sold more than 150,000 machines worldwide and the price has recently been slashed to a competitive £99.

After nearly 25 years in the business, Atari now faces its toughest period yet. A recent internal shakedown has forced pundits to speculate about the future of the company.

Olaf **Olafsson**

Title (previously): President
Company: Sony Interactive Entertainment
New York, NY, US
Career Highlights: Oversaw the launch of PlayStation in the US and Europe (1995).
Resume: Olafsson recently parted company with the $44 billion Sony Corporation, having previously been in immediate charge of all PlayStation and Sony software development activities in the US and Europe, and reporting to Mickey Schulhof, the president & CEO of Sony Corporation of America. He was even at the forefront of Sony's videogame interests back in 1991 when the SNES-based PlayStation was first announced at the summer CES. 'They stabbed us in the back,' was how the forceful Icelandic reacted to Nintendo's subsequent counter-deal with Philips.



It was Olafsson who oversaw the $48 million acquisition of Psygnosis, set up the US PlayStation operation and arranged for Michael Jackson to attend the PlayStation party at the E3 in LA last May. With Olafsson's departure following the recent exits of SCEA head honchos Steve Race and Marty Homlish, it remains to be seen who will get to flex Sony's not inconsiderable muscles.

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Power Players



Howard Lincoln

Continued

Title: Chairman
Company: Nintendo of America
Seattle, WA, US
Career Highlights: More than a third of all US homes have a Nintendo machine. (Bizarre fact: in 1954 Howard Lincoln was the model for a painting by US artist, Norman Rockwell).
Resume: In 1985, when Nintendo entered the US home videogame market, there *was* no home videogame market, just the spectacular boom-and-bust remnants of an industry that had left everyone wary. With Lincoln and Yamauchi's son-in-law Minoru Arakawa at the helm and the odds stacked against them, NoA brilliantly laid the foundations for the sprawling, multifaceted beast that now likes to be known as the interactive entertainment business. Yes, Sega worked wonders on 16bit and Sony's looking hot, but it all began with Arakawa, Lincoln, and Nintendo.

Hayao Nakayama

Title: President
Company: Sega of Japan
Tokyo, Japan
Career Highlights: Beat Nintendo to the 16bit market and despite a lack of success in Japan, managed to conquer Europe and build an unrivalled arcade empire.
Resume: Although Sega's biggest successes have been outside Japan, both the US and European Sega operations ultimately report back to the Sega Enterprises HQ in Tokyo. It's in Japan where the majority of Sega's hardware development, cartridge manufacturing, and perhaps most importantly, key software development takes place. Sega's arcade division is very much the creative engine room of Sega's success, and it's a little known fact that the blue hedgehog who took the European 16bit world by storm originally spoke in Japanese.

Mr Nakayama still takes a very active role in Sega's day-to-day activities. It's rumoured that he personally stormed to the consumer research and development departments to chastise his team after first hearing of the power of Sony's PlayStation. And despite the success of Kalinske's US operation and the similar success enjoyed by Sega Europe under Nick Alexander, Sega remains a company with its roots very firmly in Japan.

Hiroshi Yamauchi

Title: Chairman of Nintendo Company Ltd
Company: Kyoto, Japan
Career Highlights: Nintendo has sold close to 150 million game machines around the world.
Resume: When Yamauchi took over Nintendo in 1949 it was just a Japanese playing card manufacturer selling to its domestic market. He transformed it into a global videogame giant with revenues of ¥416 billion (year ending March 31, 1995). His company single-handedly rescued the videogame business from the wreckage of the mid-eighties crash (when Atari was at the wheel). Its taking of America was nothing short of genius. Yamauchi has been the mastermind behind every important move and, at 68, remains very much in charge. When the time eventually comes, replacing him will be one of Nintendo's toughest challenges.





Teruhisa 'Terry' Tokunaka

Title: President
Company: Sony Computer Entertainment
Tokyo, Japan
Career Highlights: Masterminded Japanese launch of PlayStation.
Resume: From a standing start, Terry Tokunaka has managed to race to the front of the pack in the toughest videogaming market in the world, that of Japan. The PlayStation is currently neck-and-neck with Saturn (actually, both machines are winning – depending on whom you talk to) with installed bases of well over a million units and climbing fast.

It was Tokunaka who announced to the world the release details of PlayStation in October of last year, revealing that PlayStation would launch within a week of Saturn, and at a significantly lower price. It was Tokunaka who installed the innovative system of bypassing Sony's traditional distribution channels in Japan and selling PlayStations direct to retailers – thus cutting the grey import business to a minimum. And it is Tokunaka who has continued to steer the progress of what many industry analysts regard as Sony's most successful launch since the Walkman.

Tom A Jermoluk

Title: President & CEO
Company: Silicon Graphics Industries
Mountain View, CA, US
Career Highlights: SGI signed deal with Nintendo in 1993 to develop internal technology for Ultra 64. Is the computer industry's pre-eminent provider of development hardware.
Resume: When Tom Jermoluk joined Silicon Graphics in 1986, he probably didn't expect to make game systems. With an MSc in computer science from Virginia Tech, USA, Jermoluk's first project was to help design a new CPU and bus architecture for workstation-class hardware. Jermoluk's foray into electronic games began in 1992, with the development of the Reality Engine, a version of which would later become the heart of Ultra 64. The partnership with Nintendo was inked in early 1993 (it's no secret that Silicon Graphics' technology had been presented to a number of other game hardware manufacturers) and the deal became public that August.



Ultra 64 (for the moment at least, however) is simply the tip of the iceberg. Silicon Graphics provides the best development tools for the world's interactive entertainment, special effects, and CAD industries. The company is now also an active game developer working in conjunction with rocket scientists, among others.

Bill Gates

Title: President
Company: Microsoft
Redmond, WA, US
Career Highlights: Launched *MS-DOS* Operating System in 1981. It is now installed in more than 120 million PCs. He launched *Windows* in 1983. It is now used on more than 50 million PCs. Sometime around 1994 he became the world's richest man.
Resume: Gates founded Microsoft in 1975 and has built it into the biggest software company in the world, as integral a part of the PC market as it is possible to be.



Windows '95 was launched in August last year and the firm expects to sell more than 50 million copies in the first year. More significantly, the launch of *Windows '95* sees the firm focusing on games like never before. The new environment has been created with game developers and players specifically in mind and all the major PC leisure publishers in the world are planning *Windows '95* versions of old and new games.

Microsoft itself is bringing out genuine arcade-style games such as *Hover Havoc* and *Fury*. It's also created a new division called Gamebank dedicated to developing and publishing *Windows '95* games. The very best firms in the Japanese arcade industry (Namco, Capcom, Taito, SNK, and others) have already agreed to license their next batch of titles. Gates realises that games aren't just a slice of the PC pie, they're global growth.

Michael **Spindler**

Title: President and CEO
Company: Apple
Cupertino, CA, US
Career Highlights: Macintosh is the second most popular computer format in the world.
Resume: Having begun with Apple Computers in 1980 as the marketing manager for European operations, Spindler has seen considerable international experience.

Apple spokespeople are quick to point out their computer's superiority is in multimedia, they do not think of their system as a game platform. Dataquest rates the Macintosh the number one multimedia development platform and ranks Apple as the leading personal computer vendor worldwide. However, the firm's Pippin 'multimedia player' – a TV plug-in console based on a 66 MHz PowerPC 603 chip – is unlikely to become a significant (that is, PlayStation-troubling) game machine. The Pippin technology is set to debut in Bandai's Power Player, due for release early this year. As shareware gaming continues to proliferate for the Mac platform (as some killer games like *Apeiron* and *PegLeg* become more available), games are only becoming a more significant part of Apple's domain.

F A **Maijers**

Title: Chairman
Company: Philips
Eindhoven, Netherlands
Career Highlights: CD-i (**Edge** uses the word 'highlight' loosely). Abortive deal with Nintendo to produce a CD-ROM drive for Super NES. Consumer electronics giant.
Resume: Philips, much as Sony did before the launch of PlayStation, has been stalking the game industry like a hungry predator – without much tangible success to date. CD-i started life as an ahead-of-its-time multimedia player, but ended up an under-powered games machine. The controversy surrounding the deal with Nintendo is legendary (both Sony and Philips announced they had secured the lucrative deal to produce the peripheral on the same day at CES in 1991). As it turned out, neither plan reached fruition, and both Philips' and Sony's ambitions to enter the home videogaming market remained unfulfilled.

Philips has to remain a major player in the home gaming business however, simply by virtue of its size and muscle within the consumer electronics industry. The company's CD-ROM technology also leads the world with its disc compression advances.

Yoichi **Morishita**

Title: President
Company: Matsushita
Osaka, Japan
Career Highlights: Initial investor in The 3DO Company. Produces 3DO MultiPlayer. Owns MCA (which in turn owns a slice of Interplay).
Resume: Matsushita (the parent company of Panasonic) is the biggest consumer electronics company in the world.

Matsushita is much more than a simple electronics manufacturer like Lucky Goldstar. It is also a prominent developer of technology and has fingers in all sorts of pies all over the world, creating an entertainment empire that has an often intangible affect on the interactive entertainment industry at all stages of software and hardware production.

One of the initial investors in The 3DO Company, Matsushita now stands in a formidable position heavily armed as the sole licensor of the 64bit M2 technology and with a host of Japanese partners rumoured to be keen on joining the M2-powered DVD party.

Chris **Crawford**

Title: Freelance Game Developer
Santa Clara, CA, US
Career Highlights: Founder of Computer Gaming Conference
Resume: Everybody in the US game development community knows who Chris Crawford is, although it's a near certainty that his name won't be found on the credits of many games. Crawford has been lurking on the fringes of the game community for a number of years, and he is regarded as a genius, has-been, or saviour of gaming. Everybody has an opinion.



He first made his name as a programmer of 14 titles starting from back in the early 1980s (such as 1985's *Eastern Front* for the Atari 800) and the author of four important books on game development. In these early days he started an informal get together in his home for a group of his game-developing friends, an annual meeting of minds and seminars that grew into the Computer Game Developers Conference. For various reasons, Crawford has slowly been ousted from the CGC's Board of Directors, and made his final (official, at least) appearance at the meeting last year.

Crawford is often outspoken, he usually holds an opinion contrary to the mainstream, and is usually a thorn in the side of any big game company seeking to wow an audience with its hot new technology. Dismissing the majority of interactive software currently on release as 'airy foam' at this year's CGDC, Crawford is a good old-fashioned game man. He believes in gameplay, not in graphics. And – surprising as it may seem – he is one of the few people in the industry to shout about it, and is never afraid of being branded a Luddite.

His beliefs are also perhaps at the heart of his professional problems. A text-book example of the one-man programming team, Crawford has struggled to apply his considerable talents to a team unit. But as the days of the one-man team fade, let's hope Chris Crawford stays alive and kicking.

Nolan **Bushnell**

Title: Founder
Company: Atari
Sunnyvale, CA, US
Career Highlights: Invented arcade gaming with *Pong* (1972), launched Atari 2600 home console in 1978. It sold more than 20 million units.
Resume: Bushnell invented the videogame business the first time around. *Pong* (1972) was the first hit arcade game and the 2600 was the machine that led the late seventies home-game boom. He founded Atari in 1972 for $500 and sold it to Time Warner in 1977 for $28 million. A year later, however, he left Atari (with pay-off and non-competition clause), unable to cope with the corporate constraints of such a huge company. For the next three years, while the 2600 was at the heart of what became a multibillion dollar industry, Bushnell built up the 278-strong Chuck E Cheese pizza restaurant chain in the US (it later went bust). He continued to watch as the game business in general (and Atari in particular) self-destructed, producing ridiculous amounts of crappy games. In 1983 Atari was responsible for Warner losing $283.4 million in one quarter. Bushnell later re-emerged unconvincingly as an evangelist for Commodore's ill-fated CDTV.

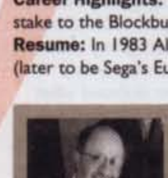


In Autumn he will open the first E2000 Entertainment Centre in California. Covering nearly 40,000 square feet, it will feature myriad interactive attractions. There will also be Future Sports, combining elements of videogames and athletics.

Bushnell also, incidentally, turned down the chance to be a partner in Apple when it was just two kids (Jobs and Wozniak) designing prototypes in their garage.

Martin **Alper**

Title: President
Company: Virgin Interactive Entertainment
Orange County, CA, US
Career Highlights: Founded VIE (1983), sold a 90% stake to the Blockbuster group for $165m (1994).
Resume: In 1983 Alper and friend Frank Herman (later to be Sega's European boss) set up a company called Mastertronic, which banged out two or three £1.99 cassette-loading games a week to a market of machines such as the C64 and Spectrum.



Mastertronic sold out to Richard Branson's Virgin group, and Alper moved to the States to set up the US office, which (along with a London-based European HQ) has driven VIE to rise from the ranks of the also-rans to stand alongside EA as one of the most successful game publishers in the world. Most recently, Blockbuster bought a 90% share in the company, providing a massive cash injection as well as affiliation with the movie and TV divisions within the entertainment giant's Spelling group.

Continued next page

50 Power Players

Jonathan **Ellis** & Ian **Hetherington**

Title: Joint Managing Directors
Company: Sony Interactive Entertainment
Liverpool, England
Career Highlights: *Shadow of the Beast* (1988), *Lemmings* (1991), sold out to Sony in 1993, *Wipeout* and *Destruction Derby* (1995)
Resume: The company formerly known as Psygnosis made its name in the mid-eighties as one of the most imaginative and adventurous software houses publishing for home computers such as Atari's ST and Commodore's Amiga. *Shadow of the Beast*, released in 1988, was hailed by critics as a landmark and cemented the firm's reputation as a publisher that operated at the cutting edge.

That all changed, however, with the release of DMA's *Lemmings* in 1991. It wasn't a breakthrough in technological terms, but the gameplay was stunningly original and amazingly addictive. So far, the original and subsequent sequels have sold more than 4 million units around the world. In 1993 Ellis and Hetherington sold out to Sony, making Psygnosis a part of the Sony Electronic Publishing division, and have been involved in formulating the strategy behind the European launch of PlayStation. They remain, however, very much in charge of game development. In August the company changed its name to Sony Interactive Entertainment. It will undoubtedly emerge as one of the most prolific and innovative supporters of PlayStation – according to SIE, forthcoming titles, *Tenka* and *F1* will show that *Ridge Racer* and their own *Wipeout* are yesterday's news (see **E**29).

Brian **Fargo**

Title: Founder & CEO
Company: Interplay
Orange County, CA, US
Career Highlights: Founded Interplay in 1983. *Battlechess* (1987). Sold minority stake to the MCA/Universal group in 1994.
Resume: Fargo is possibly the only CEO of a major game software house who writes games. His latest project, *Stonekeep*, has swallowed the last four years of his life and was finally released on CD-ROM last November. Within the company it is referred to as 'Brian's baby'. His devotion to gaming and struggle for perfection permeates the whole company and, it has to be said, pushes details such as release dates well down Interplay's agenda. More often than not, however, players and reviewers agree that the product is worth the wait. The giant MCA/Universal corporation was impressed enough to buy a stake in 1994. No financial details of what was surely a multimillion dollar deal were ever disclosed other than the fact that Fargo kept the majority interest. He certainly continues to set the tone.

Earlier this year the firm acquired Shiny Entertainment, the development group set up by Dave Perry (of Virgin/Disney's *Aladdin* fame) which scored a huge hit with its first title, *Earthworm Jim*. Shiny's presence looks set to add a keenly commercial edge to the Interplay group and help give the publisher as big an impact on consoles as it already has on the PC.

Greg **Fischbach**

Title: Chairman & CEO
Company: Acclaim Entertainment
New York, NY, US
Career Highlights: *NBA Jam* and the *MK* series.
Resume: Certainly one of the most successful publishers of videogames in the world, despite a recent fall from glory. Add the PC into the mix and the crown slips, but on consoles Acclaim has been the hit factory of gaming for the past few years.

Fischbach founded the company in 1987 publishing NES games. It has traditionally been a slavish follower of the massmarket formats rather than a chaser of technology. Its speciality is big, brash, overtly commercial and highly successful videogames and it's never far away from the most wanted licenses (historically: *WWF*, *The Simpsons*, *Terminator 2*. Most recently: *Batman Forever* and *Judge Dredd*). It has also been adept at taking the hottest hits from arcades into homes, *Mortal Kombat 1* & *2* (more than 10 million sales between them) and the *NBA Jam* series shine out.

Acclaim published *Mortal Kombat III* on the SNES and MegaDrive last Autumn. Williams, the company behind *Jam* and *Kombat*, recently announced that it will be developing and publishing its own home versions of its arcade games for the next generation platforms, a move Acclaim countered by beefing up its own in-house development capabilities and its own motion-capture and blue-screen studios. It is also branching out onto CD-ROM and gearing itself up for a heavyweight assault on PlayStation and Saturn. Last year it set up a joint-venture with US cable giant Tele-Communications Inc (TCI).

Recently, however, the company has blamed a set of poor financial results (profits of just $600,000 on revenues of $134,000, compared to profits of $15.9 million during the same period last year) on slow sales over the Christmas holidays and a huge stockpile of unsold 16bit carts.

Kelly **Flock**

Title: President
Company: Sony Interactive Studios America
Foster City, CA, US
Career Highlights: Marketing of *Sam & Max* and *Rebel Assault*. Designed *Shanghai 2*. Now in charge of Sony's game development.
Resume: Few people have seen more sides of the computer game industry than Kelly Flock. While working at Activision, he worked on the marketing of *Mechwarrior* and later designed *Shanghai 2*. He later moved to LucasFilm, later called LucasArts, to work in product development and marketing. In 1992, he took over the marketing division.

Flock now works at Sony where he has the challenging job of improving the reputation of the company formerly known as Imagesoft. He says the industry is in a state of change. 'I see myself focusing more on product. The industry's headed toward massive productions and more internal synergy. I see myself running Sony Development for a few years then taking off on my own.'

Richard **Garriott** (aka Lord British)

Title: Founder & Director of Development
Company: Origin Systems
Austin, TX, US
Career Highlights: The *Ultima* series.
Resume: Garriott is something of a character in the development community. He likes to be known as Lord British, holds haunted house days in his Texas mansion, and will apparently don medieval garb at the drop of a helmet.

He founded Origin in 1979 and catapulted the firm to global success with the *Ultima* series, which has become a smash hit in every major gameplaying country in the world, particularly Japan where there are Ultima cartoons, comic books, and even pop songs. The series is now up to eight with episode nine due for release in Christmas this year. Garriott sold Origin to Electronic Arts and now has a say in a wide variety of EA's development projects but remains ultimately committed to the Origin label and the *Ultima* series.



Bing **Gordon**

Title: Executive VP, EA Studios
Company: Electronic Arts
San Mateo, CA, US
Career Highlights: Co-founded EA (1982), Head of EA Studio (1982 to present day).
Resume: As the worldwide head honcho of EA Studios, Gordon is in charge of the most prolific and consistently brilliant development resource in gaming. He has taken the firm from pioneering on the PC to massive commercial and critical success on consoles and now onto CD-ROM and into the next generation. He is still a huge influence on EA's output, working closely with the producers of each and every title. EA's reputation for being not just the biggest but the best games publisher in the world can be attributed to Gordon's presence from day one.

Larry **Probst**

Title: President & CEO
Company: Electronic Arts
San Mateo, CA, US
Career Highlights: Joined EA in 1984 as VP of sales and distribution. Promoted to top slot in 1991.
Resume: Simply, Probst is the boss of the biggest publisher of interactive entertainment in the world. He took over as president when the firm's founder, Trip Hawkins, decided to go and chase the dream with 3DO. The worry was that with Hawkins would go the creative urge and entrepreneurial spirit that defined the company. Four years later EA is still at the top of the tree. Probst may not be as colourful a character as his predecessor, but he does seem adept at combining the freedom and daring of creativity with the restraints and common sense of a commercial operation.

Ken **Kutaragi**

Title: Director R&D Division
Company: Sony Computer Entertainment
Tokyo, Japan
Career Highlights: Designed Sony's PlayStation chipset.
Resume: Ken Kutagari has been with Sony for more than 20 years, and he first dipped his toe into the world of videogames when he designed the abortive Sony CD-ROM add-on for the SNES. The PS-X PlayStation project gave him his second chance to create the ultimate games machine, however, and many people around the world would say without doubt that he has succeeded.

'The objective was a high-performance, low-price videogame system which also had a design that was easy to write games for,' reveals Kutaragi. 'The technology came from an original idea to create a synthesiser for graphics; something that takes a basic graphic and then adds various effects to it quickly and easily.'



Work on the project didn't entirely go without schedule-induced incident, however. 'At the peak we stayed up all night for several nights in a row. We couldn't stop working because our work was so interesting. The only problem was that our office in Alasaka didn't have a bath in it. One of our employees didn't wash for more that two weeks!'

Joel **Hochberg**

Title: President
Company: RARE & Coin It, Co.
Miami, FL, US
Career Highlights: Veteran arcade mogul. First non-Japanese recipient of investment from Nintendo. Created more than 60 8bit NES games. Sold over 7 million 16bit cartridges in 1994.
Resume: Having been involved with coin-operated entertainment long before the birth of the videogame industry, Joel Hochberg has seen every phase of the business. A young Nolan Bushnell contacted Hochberg in the early seventies for advice after launching a game called *Pong*.



Chris and Tim Stamper began working with Hochberg in 1979, converting *Space Invader* arcade boards for the English market. Together, Hochberg and the Stampers formed RARE Limited, a firm which created popular titles for the 8bit Spectrum. In the eighties, Hochberg approached Nintendo's Minoru Arakawa about creating games for the NES. Rare went on to create more than 60 games for the 8bit NES and five games for the SNES including: *Donkey Kong Country*, *Killer Instinct* and *Diddy's Kong Quest*. Rare sold more than 7 million game cartridges last year and is expected to sell more than 9 million this year.

Kagemasa **Kozuki**

Title: President & CEO
Company: Konami
Kobe, Japan
Career Highlights: Created a burgeoning arcade business throughout the eighties spurning classic series such as *Gradius* and *Contra*. Was Nintendo's biggest NES licensee in 1991 following the success of *Teenage Mutant Ninja Turtles*.
Resume: Founded in 1973, early Konami arcade hits like *Scramble* and *Juno First* are every bit as classic as Namco's *Pac-Man*, Williams' *Defender*, and Taito's *Space Invaders*. The company's steady success on the home platforms has resulted in a sense of pedigree that few other console-only companies can equal. Konami was one of Hiroshi Yamauchi's original Nintendo licensees, and the company benefited enormously. Konami's earnings exploded from $10 million in 1987 to $300 million in 1991, culminating with the runaway success of *Teenage Mutant Ninja Turtles*. Kagemasa Kozuki has been with the company from the beginning, having been appointed CEO of Konami Kogyo in 1974. The company's US office reports back to Kobe, and Kozuki remains very much at the head of Konami's operations.



The establishment of a US development resource (for the production of sports games), and the promise of no fewer than 12 PlayStation games in development, would indicate that Konami's glory days aren't necessarily all behind it.



Fergus **McGovern**

Title: Managing Director
Company: Probe Software
London, England
Career Highlights: Has produced more than 450 games.
Resume: Despite never having written a line of code in his life, Fergus McGovern heads the largest independent game development resource in the world. His talent is attracting and keeping some of the finest talents in the industry and working strictly to publishers' deadlines – a rarity in the game business.

Probe's speciality is turning big name licenses into quality titles. It has done excellent work over the years for its clients, notably Acclaim, Sega, and Virgin. In the last ten years Probe has produced 450 games which between them have generated $1.7 billion at retail around the world.

Masaya **Nakamura**

Title: Chairman & Founder
Company: Namco
Tokyo, Japan
Career Highlights: *Pac-Man*, *Galaxians*, *Dig Dug*, *Ridge Racer* and *Tekken*
Resume: According to Namco founder and chairman Masaya Nakamura (Namco is actually an acronym of NAkamura's Manufacturing COmpany) 'Play is culture.' If this is so, then Namco has spread a lot of culture, in the form of *Pac-Man*, *Galaxians*, et al.



Although founded in 1955 as the manufacturer of coin-operated children's rides, it was in the 1970s that a little yellow dot named *Pac-Man* changed Namco for good. It is now part of videogaming folklore that the engineer responsible for producing what is arguably the most popular videogame of all time was rewarded just $3,500 for his efforts by Nakamura. The engineer left the company in disgust.

Namco's feud with Nintendo is almost as legendary. It started in 1981, when Nakamura learned the company would lose its favourable developer status to Nintendo. Now Namco is firmly allied with Sony. Wonder why.

Continued next page

50 Power Players

R J **Mical** & David Needle

Title: Vice Presidents & Fellows
Company: The 3DO Company
Redwood City, CA, US
Career Highlights: Inventors of the Amiga, Lynx, and 3DO.
Resume: It's true that of the machines that Mical and Needle have created, only the Amiga has been a true global massmarket hit along the lines of the NES or MegaDrive. But it's only fair to put forward the argument that this is down to the marketing of the machines rather than the quality of the product. Take the Lynx, technically the best hand-held console seen so far, but trashed by Nintendo's Game Boy through pricing, marketing, and software support. And 3DO, when seen four years ago, was a giant step forward – it only stumbled when the men in suits got hold of it.



Gumpei **Yokoi** & Masayuki **Uemura**

Title: Heads of R&D Nintendo
Company: Kyoto, Japan
Career Highlights: Invented Game & Watch, Game Boy and Virtual Boy (Yokoi). Created NES and SNES (Uemara).
Resume: Yokoi and Uemara were the R&D chiefs that took Nintendo into the age of interactive entertainment – and dragged the rest of the world with them. They made their name in the domestic market with gimmicky toys such as The Ultra Hand (simply a mechanical gripping device) and The Love Tester (a couple held hands while their free hands



gripped the handle of the Tester which measured how much 'love' was passing between them).

In the early eighties, inspired by machines such as Atari's 2600, the two turned to videogames. Yokoi's division (R&D 1) came up with the Game Boy and many of Nintendo's biggest software hits. Uemara's team (R&D 2, surprisingly enough) brought the NES and SNES to life. The NES remains the biggest selling game machine in history. More recently Yokoi has been behind Virtual Boy (some say blots have been introduced to copybooks for the first time). Neither were involved with the development of Ultra 64.

David **Guldbrandsen**

Title: Head of technological development
Company: Scavenger
Los Angeles, CA, US
Career Highlights: *Sub-Terrania* (1993) and *Red Zone* (1994)
Resume: One of the fastest up 'n' comers in the games industry is Scavenger, an LA-based games producer with only two real hits (and especially the excellent *Thrust*-clone *Sub-Terrania* for the MegaDrive) to date. But further success is almost certainly guaranteed, looking at the company's line-up of forthcoming 32bit releases (for more details see **E25** and **E28**).

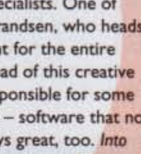


Daniel Small, president of Scavenger, leads a selection of talent from all over the world. Many of the scandinavian demo coders of the early 1980's Amiga scene (a prolific strain of the hacker gene) are now employed as graphic specialists. One of these Europeans is David Guldbrandsen, who heads up the technological development for the entire range of Scavenger's titles. As head of this creative melting pot, Guldbrandsen is responsible for some of 1995's most exciting software – software that not only looks great, but actually plays great, too. *Into The Shadows*, a hi-res fighting game for the PC, *Vertigo* and *Amok* for Saturn, plus a couple of 32X titles ('The 32X is a great machine, but it just didn't happen,' argues Small) completes Scavenger's 1995 line-up, to be release in '96.

'There are people in this office for 24 hours a day, seven days a week,' explains Small. 'It's a lifestyle. This isn't a job. You don't do this kind of work if it's not your life.' But just looking at the quality of games seen so far, it would seem that Guldbrandsen's dedication is paying off.

Geoff **Crammond**

Title: Programmer
Career Highlights: *The Sentinel*, *Stunt Car Racer*, *Formula One Grand Prix*
Resume: Geoff Crammond is one of the last bastions of a forgotten era. The era of one-man programming. He is also the UK's undisputed master of 3D coding. Not just because he squeezes every last ounce of power out of a machine, but because his portfolio of games is about as admired as you can get. Designer and coder of gaming milestones such as *The Sentinel* (arguably the most engrossing, immersive 3D experience seen), *Stunt Car Racer* (one of the greatest racing games ever), the superb *F1GP* and its imminent sequel, he has an incredible ability to marry technical prowess with supreme playability.



Now *F1GP2* is complete, his next project is uncertain: 'Perhaps *Stunt Car 2*, with 36 cars bobbing up and down at the same time. But that's just a possibility...'



Tom **Zito**

Title: President
Company: Digital Pictures
San Mateo, CA, US
Career Highlights: The most controversial game of all time: *Night Trap* (1992). Best-selling entertainment CD-ROM of its time: *Sewer Shark* (1991). Producer of 20 FMV-based games released so far and counting...
Resume: It's a safe bet that Tom Zito's Digital Pictures will outgrow the dubious honour bestowed upon *Night Trap*, and the hollowness of *Sewer Shark*'s success (the game was remarkably poor). But notoriety and skeletons in the closet are simply the price of pioneering, Zito would no doubt say, and these two titles are a long way back in Digital Pictures' past.

Love or hate most FMV-based games (and – it has to be said – most true gamers hate them), it's impossible to deny their salability. The genre has continually struggled to justify itself through fair weather (the whole 'merging of Hollywood and Silicon Valley' hype) and foul weather (the first fruits of this ill-advised marriage). But survived it has, with many game developers just now beginning to start scaling a learning curve that Digital Pictures embarked upon five years ago.

Masayoshi **Takemara**

Title: Japanese Finance Minister
Tokyo, Japan
Career Highlights: Controls the most successful economy in the world.
Resume: With Sega, Nintendo, and Sony manufacturing some, if not all, of their hardware and software in Japan, the yen is the most important currency in the global games market. When the yen is strong it costs other companies (including US divisions of Sega, Nintendo, and Sony) more money to buy goods and so prices can be forced to rise at retail. This also has a huge affect on release dates.

Earlier in the year the yen reached record levels and put great pressure on the pricing of Saturn and PlayStation. Companies were paying higher and higher pound/dollar prices for goods even though the yen price remained static. Takemara has subsequently introduced a number of measures designed to weaken the yen and so encourage trade with Europe and the US. He has had considerable success so far and the pressure is off pricing, for now, but the relationship between the pound and the yen remains vital, and Takemara remains the man in charge.

Photography supplied by Jude Edginton, Stuart Whale, Kilye and Antonio Pagnotta da Fonseca

Toshinden 2





***Toshinden 2* reprises the original's translucent sparks in battle (main). The game's 'camera' angles are similar, too (top right)**

Format:	PlayStation
Publisher:	Takara
Developer:	Tamsoft
Price:	¥5,800 (£40)
Release:	Out now (Jap)





Tracy is a new female fighter (top). Others have been enhanced (above)

Despite its obvious shortcomings when compared to *Tekken*, the original *Toshinden* remains a seminal PlayStation title, being the first commercial piece of software for the machine which truly touched upon its foreboding power. Certainly, it was a grabbing game, its reputation strong enough to spur Capcom into purchasing the coin-op publishing rights for the inevitable sequel, giving the ailed Japanese softco a chance to buy some time until its designers finally deliver a 3D *Street Fighter*.

As sequels go, *Toshinden 2* does it strictly by the numbers. There are three chief enhancements, foremost of which being an improvement in speed – this incarnation is noticeably swifter, making for a more immediately exciting (if sometimes harder to follow) experience than its parent. The obligatory sprinkling of new fighters makes up the second big change: five new initially available characters join the eight from the original. Finally, the main twist in gameplay involves 'Overdrive' moves; attacks which can only be affected when your fighter's power bar maxes out (achieved by attaining and maintaining a regular hit rate on your rival).

The remainder of the game fails to dramatically build upon what has gone before. Graphically, Tamsoft has made little progress, the most notable achievement being the realtime light-sourcing, adding hugely to the game's atmosphere – but there are at least as many visual failings as there are triumphs. Level backdrops are more complex than those of the former game, with stages featuring simplistic yet effective building structures. Cranking up the polygon and speed count elsewhere, however, has meant a lowering in colour and definition – the new backdrops look almost Lego-like in comparison to the finely rendered environments on show in the first installment. A slew of imaginative spot effects go some way to countering this failing, with swirling mist and crashing waves being two to admire. The busier backdrops rank as the



Gaia, the end-of-game boss from the original *Toshinden*, returns as a playable character in the sequel, albeit in a considerably updated form





Tamsoft's graphical advancements are especially evident with Ellis, one of the eight characters carried over from the first game. Her clothing is now considerably more elaborate than that of the original

most memorable graphical features, however – Sofia now fights in a nightclub with flickering dancefloor lights and tacky glitterball reflection effects, while Mondo inhabits a florid marble hallway whose curtains raise mid-bout to reveal an ornate oil painting set upon the wall.

Each fighter is now bedecked in enhanced versions of their former guises, making them even more outlandish in appearance. Sorcerer Fo has become a more twisted figure than before, while Ellis' famed translucent apparel has been given an intricate flowerpetal-like style. And, unlike the characters in *Tekken 2*, who lost their Gouraud-shading in order to facilitate Namco's new lighting routines, *Toshinden 2*'s retain the solidity-enhancing effect. Of course, all the trimmings in the world can't disguise the fact that there's not one character here to hold a candle to *Tekken*'s Yoshimitsu, for example.

Despite the patent attempts at advancements, *Toshinden 2* fails to offer gameplay to considerably better the original. Along with new special moves – which accompany enhanced versions of all the old tricks – each character can now body slam an opponent and also deliver the now-standard move of smashing opponents while they're down. But the core gameplay remains *Toshinden* throughout, and those who've long since subscribed to *Tekken*'s comfortable, intuitive playing style will find the game uncomfortably uninviting.

Elsewhere, *Toshinden 2*'s presentation is sloppy and smacks of hurried programming, its music and effects are no less forgettable than those of the original, and it now offers an intro sequence which mixes cheesy live-action footage with pre-rendered fighter animations to pretty miserable effect.

In the light of Sega's exceptional Saturn *Virtua Fighter 2*, *Toshinden 2* feels tired, despite its marked efforts to appear fresh. Its most convincing achievement, in fact, is its consolidation of the theory stating that many sequels come into being not because their designers see extra territory begging to be explored within a theme, but because sequels of successful games are the easiest to sell. A grim theory, and one that doesn't bode well for 32 and 64bit gaming.





Your character's 'Overdrive' move is more aesthetically complex than his or her standard range (main). Chaos (below right) is one of the five known extra characters brought in by Takara to give the sequel a boost







Toshinden 2 offers battle arenas which have been shrunken down from those seen in the original, making for faster, more exciting, bouts

Edge rating: **Seven** out of **ten**

Total NBA

Format: PlayStation
Publisher: SCE
Developer: In-house
Price: £44.99
Release: Out now





Perhaps the only criticism that can be made of *Total NBA* is the sometimes confusing number of players crammed into one space (above). However, this can only be expected from a basketball sim







Last year, PlayStation owners looking for a decent sports sim were not exactly spoilt for choice. A brace of Namco titles – *V Tennis*, *Winning League* and *Prime Goal Ex* – hardly set the games world alight, and other contenders, *Boxer's Road* for example, were similarly mediocre. At the moment however, things appear to be changing. Gremlin's *Actua Soccer* has been turning heads recently and Sony's own *Total NBA* is not only a marvellous sports sim, but also, perhaps, one of the best games currently available on the 32bit formats.

First, the obvious point: *Total NBA* looks incredible. From the spotlights reflecting on the polished wooden surface of the court, to the beautifully animated characters, this game oozes visual finesse from every polygon. Just watching the players hurl about the court, their lower limbs reflected as they go, is a breathtaking experience indicating just how far software has come in the last five years. The motion capture and light-sourcing techniques that Jules Burt boasted about in **E**27 are, indeed, amazing. These players constantly trick you into believing they are real, their movement is intricate and complex, yet effortless and graceful. Graphically, this is so far ahead of *NBA Jam* it is difficult to mention the two games in the same sentence.

But, thankfully, *Total NBA* doesn't stop at astonishing aesthetics. This game is extraordinarily good fun to play. Whether in one or two-player mode, it is difficult to think of a more compulsive gaming experience – a feat indeed; especially considering this is one of Sony's first in-house developments.

The designers' success in simulating this tricky sport is perhaps down to a number of factors. Graphics, of course, lend a lot to the experience, especially when astounding slam dunks are performed. There is more of a stimulus to attempt tricky shots if they're rewarded with a well-animated player balletically rising above the ring to slam the ball through the hoop.



After an impressive basket has been performed, such as this flying slam dunk (above), *Total NBA* replays a close-up of the winning move. The game also chooses the best camera angle





Landing a free throw is tricky, the moving green lights have to be stopped in the centre of the 'X'



those who come into the 'talented' category, a simulation option is also available. Here, all the rules of basketball are observed and players on court will get tired as the game goes on. Added together, these features make *Total NBA* more than just a riotous free-for-all. For those who seek them there are many possible strategic elements. And for once, those who don't are not penalised for just wanting to have a good play around. *Total NBA* supports all comers.

Criticisms of the game are few. Some players may get annoyed with the squeaky trainer sounds (although others will find this adds to the realism) and some may complain that it is rather difficult to defend (although others will point out that choosing the right team formation will alleviate this problem). In truth, defence is a little tough— there are only two moves 'jump to block' and 'steel', which are sometimes rather ineffective. However, *Total NBA* is geared, as perhaps it should be, toward offensive play. Highly effective defensive moves can lead to frustrating stalemates – this is a game after all.

Despite the defence question, *Total NBA* is quite simply the definitive basketball sim. It's lavishly presented (the front-end options screens possess a quality only found on TV), atmospheric and, best of all, compulsively playable. Sitting still during a game is virtually impossible. Players will find themselves throwing their controllers around, swearing at the screen and, in a few rare, heavenly moments, jumping with elation as a long shot plops through the hoop with one second left on the clock. It is unlikely that *Total NBA* will convert gamers who hate sport sims, but for those who love them, and for those who are willing to experiment, this is as close as you can get to an essential purchase.

VIEWS



***Total NBA* offers a variety of views. Surprisingly, unlike other sports sims, the majority of camera angles available do not detract from the playability of the game. Viewing the whole court (left) gives a good overview of the action, whereas player view (right) concentrates on the man with the ball**

More important though is the uncomplicated control method which welcomes beginners and seasoned pros alike. *Total NBA* utilises all the fire buttons, allowing short passes, passes to basket, jump shots, dunks and various defensive moves. However, each button's individual role is clear and soon becomes second nature, meaning different styles of play can be experimented with at a very early stage. Furthermore, only one shoulder button is used (to add pace to the player on the ball) so key presses are kept to a necessary minimum. In short, there are no complex moves involving multiple key presses and pad manipulations, so play is exactly what it should be: instinctive and intuitive.

That is not to say that *Total NBA* requires no tactical thought. As well as being playable, *Total NBA* is also realistic. Teams can be placed into several formations, some defensive (full and half court press), some offensive (Inside triangle, box offensive, etc), so the game can be manipulated to suit each player's game style. Within the game itself, each team member has his own skills and weaknesses which have to be understood and exploited to beat talented opponents. For those who come into the 'talented' category...

Edge rating: **Nine** out of **ten**





The motion captured characters add an incredible depth of realism to the game – it is like watching television

Darius Gaiden





At first *Darius* fails to impress graphically, with clichéd metallic space structures floating in the background (left). Later levels, however, satisfy image-lust with weird pulsating scenery (above)

Format:	Saturn
Publisher:	Taito
Developer:	In-house
Price:	¥5,800 (£40)
Release:	Out now (Jap)



The similarity of levels undermines the pyramidal playing structure, where the player can choose routes



***Darius'* pseudo-3D bosses need the usual mass of smart bombs to die**

When *Darius* first graced Japanese arcades in 1987, the innovative three-screen-wide cabinet, combined with hi-res graphics and exquisitely-designed aliens ensured the game's success. Following a memorable conversion to the ancient PC Engine CD ROM² system (running in a humble 64K of RAM), there have been two additions to the *Darius* series, with this, a conversion of the latest coin-op, the first to make 32bit.

At first glance *Darius Gaiden* looks uncomfortably 16bit, with little to exploit the Saturn's potent 2D hardware. The backgrounds, while acceptable, have been seen before, and have been seen better; and although the aliens attack in uncompromising waves, the tiny sprites fail to pose any threat. With one finger continuously on the fire button it is easy to cruise through level one, the aliens' explosions accompanied by poor tinny effects, leaving the player diving for the commonly-occurring power-ups.

However, by levels three or four *Darius* begins to make more of an impression. Wobbly psychedelic colours scroll past in the background as wave after wave of sprites spray forth from all angles. True, the gameplay is still 16bit (perhaps even 8bit), but visually, at least, the game looks fit for the Saturn.

With the addition of multiple routes, available on completion of a level (reminiscent of *Out Run*), it would seem as if Taito have all the ingredients of a classic blaster. But somehow something has gone amiss along the way. Choosing where to go next should, in theory, increase the game's longevity, but due to the similarity of later levels this just isn't the case. Marry this fact with the disappointingly diminutive levels and *Darius Gaiden*, although pretty, fails to satisfy.

Seeking to revitalise the archaic horizontal shooter, *Darius* attains an acceptable level of asthetic competence but also manages to expose just how under-designed even the most recent coin-op shooters are.



Because *Darius* sprays the screen with power-ups, the two-player option becomes more of a fight for weaponry than cooperative play

Edge rating: **Six** out of **ten**

testscreen

Horned Owl

Format:	PlayStation
Publisher:	SCE
Developer:	In-house
Price:	¥5,800 (£40)
Release:	Out now (Jap)





The polygonised end-of-level bosses add some variety to *Horned Owl's* otherwise rigid, repetitive gameplay







There is nothing in *Horned Owl* that hasn't been tried before in a game of this genre. Windows shatter (left), baddies charge toward the player (top right), and two players can join in the fun (above right)

The '3D on-rails shoot 'em up' is a genre that has changed little since *Operation Wolf* defined the rules eight years ago. Even more than racing games and beat 'em ups, *Op Wolf* clones stick to the guidelines and rarely try anything new. *Horned Owl* is an obvious example of this rigidity.

Given the familiar gameplay concept, the most striking feature of this title is its distinct anime look and feel, which extends further than the beautiful manga-style pre-rendered scenes and infuses the game with a gloomy, portentous atmosphere. The exterior backgrounds – impressive post-apocalyptic cityscapes, full of burnt-out cars and dark, soot-blackened sky scrapers – are pure Akira, while the space ships, interiors and enemy troopers look to be highly influenced by the Gundam epics. This is a game which, like *Virtua Cop*, is a victory of style over content. So much effort has gone into the luscious presentation that the player is almost completely diverted from the shortcomings in the gameplay.







For all the flash visuals and atmosphere, *Horned Owl* can become pretty tedious after a long session of play, mainly due to the little variety in gameplay. Unlike *Virtua Cop*, there are very few innocent bystanders getting in the way, removing an important tactical element. There is also a grave lack of enemy diversity, giving very little stimulus to keep going.

However, the game's similarities to *Virtua Cop* outweigh its differences. *Horned Owl* is just as initially addictive, just as much fun in two player mode and, unfortunately, just as easy to finish. With a little more imagination this could have been a great game, but imagination seems to be a scarce commodity in this industry.





Distancing itself from polygon minions a la *Virtua Cop*, *Horned Owl* introduces scaled sprites to the 3D environment. The cartoon-like effect fails to suit the crisp, smooth 3D (left)

Edge rating: **Five** out of **ten**

Defender 2000

Format: Jaguar
Publisher: Atari
Developer: Jeff Minter
Price: TBA
Release: Feb/March





***Defender 2000* tries to marry *Defender's* playability with Jaguar visuals. It fails dismally**



Because the play area is taller than the screen, humanoids are often missed as the ship flies by



Jeff Minter's astonishing *Tempest 2000* is probably the only reason Atari's Jaguar is still alive today – everyone **Edge** knows with a Jag bought it purely to play *T2K*. Now, as the machine's death rattle echoes in its weary throat, the veteran coder has been brought back to administer CPR via another classic coin-op update.

Minter, though, has long had a weak spot where *Defender* is concerned – his versions of this and coin-op follow-up *Stargate*, for the ST and Amiga, (in a package which included Jeff's own update, *Defender 2*), were awful, bringing in a host of unwanted new ideas (mouse control, autofiring) and dumping important features of the original (like hyperspace, depending on which control system you used). *D2* itself was a complex, overdetailed, overfast and under-playable disaster.

Unfortunately, Jeff doesn't seem to have learned any lessons in the intervening years. In *T2K* style, this cart features '*Classic Defender*' (a semi-close but ludicrously easy version of the original), '*Defender Plus*' (an eye-searing mess borrowing several ideas from *Stargate*, but throwing away most of the good ones), and *Defender 2000* itself, which is less of an update of arcade *Defender* than an update of Jeff's own *Defender 2*, and is, sadly, desperately terrible.

Why? Again, it's far too easy. The first 20 levels whip by, but without the player feeling at all in control. Visually, it's a shambles. The extreme speed, coupled with vastly swollen graphics and jerky, parallax backgrounds mean it's impossible to tell what's happening. The powerups merely add to the confusion (rescued humanoids are attached to your ship, unleashing a barrage of fire so fearsome that most enemies are wiped out before they even register on screen) and indeed the only way to realistically play the game is to creep around at the slowest speed, whereupon the highly sensitive controls make flying your ship like trying to steer an oil tanker around an ice rink.

Whether on PC, Game Boy, Amiga or any other platform, there are other ways to play *Defender* in 1996. Choose one of them instead – *Defender 2000* is an insult.





***Classic Defender*, a lame copy of the original (top) and *Defender Plus*, a tragic 'improvement' (above)**

Edge rating: **Three** out of **ten**

Marathon 2: Durandal

Format: Mac CD-ROM
Publisher: Bungie
Developer: In-house
Price: £54.99
Release: Out now

The intense rivalry between PC users and Mac fanatics has been evident for years. When *Windows 3.1* was popularised on IBM-compatibles, Mac owners mockingly dismissed the copycat Operating System, unaware that it would soon threaten their beloved computer's very existence.

Another nail to be hammered into the Macintosh coffin was a chaotic first-person-perspective shoot 'em up called *Doom*, arriving for the PC in the days when Mac games were almost unheard of. Running under the antiquated DOS set-up, the game still







***Marathon 2*'s thousand-colour 3D is one of the most sophisticated seen in this type of game, with no distracting polygon skewing or glitches**

remains the benchmark for a genre that every software house seems desperate to conquer.

Fortunately for Mac owners, Apple had predicted the demise of their Motorola-bred computers. To combat Intel and Microsoft's imminent world domination they released the Power Macintosh, a Mac-compatible machine with blistering speed, instantly turning the much-lauded Pentium processor into yesterday's technology.

With this breakthrough one game stood out. The company's history creepily parallelling that of *Doom* and its creator's, id software, *Marathon* was developed by a bunch of gamehead programmers who met by chance and shared the same thirst – to create the ultimate *Doom* clone for the Macintosh.

A year on and a few million dollars richer, Bungie software are back with the sequel to the best-selling Mac game ever. As with titles of this genre, little explanation is needed to detail the essential gameplay of *Marathon 2: Durandal* – pick up the weapon, shoot the baddies, open the door, solve the puzzle, etc.

It's the extra features that make *Durandal* excel over the original, however, most notably the use of water. Rather than limiting play to inter-connected chambers, the world of Lh'owon (the game's setting) is a floating empire, concealing water-logged tunnels that snake beneath the immediately obvious safe routes. Only by diving into the slime can progress be made – run across an immense chamber, then plunge into the ooze to swim back beneath the twisting passages and off into new districts of the aliens' home planet.

This may seem like a cosmetic gimmick, but these flooded shafts hide another danger.

When underwater, weapons clog up, meaning the only defence is the use of fists. Coupled with the sense of panic created by a desperately low oxygen tank and the realisation that 'walking' is the only means of progress (in water, 'running' makes the marine rise upwards, often causing him to bob in tiny airlocks rather than race through the caverns) the hysteria created by *Durandal* can soon become overwhelming.

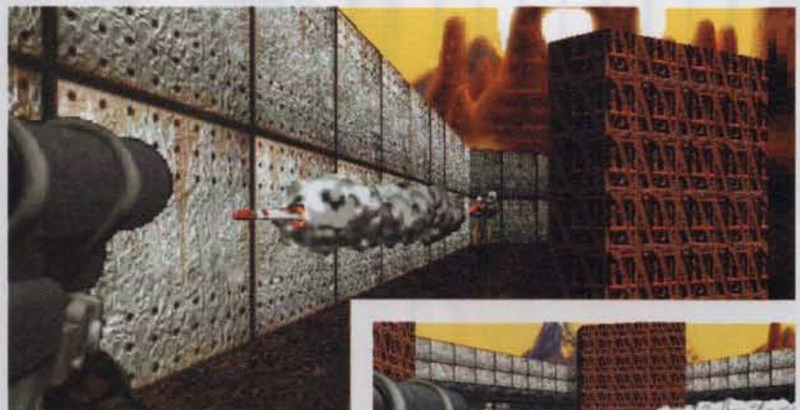
To combat such hazards *Marathon 2* enables cooperative network play. Up to eight players can join in the mission, each exploring different sections of the map and returning their findings to the team using the Mac's in-built microphone. The network option introduces every man for himself, protecting a home base from the other players, and even a tag derivative where everyone has to kill the player who's 'it'.

More improvements include the use of ambient sound to create an eerie, sometimes claustrophobic environment. The howling winds and rushing water provide a comfort hard to find when struggling through the tight corridors.

The original *Marathon* was criticised by some for the overuse of controls – there was a key for almost every movement. However, this initially complex set-up, once mastered, is critical to the subtleties of the game. By using the mouse and keyboard in combination, players can swerve past bullets or run in arcs,

Networking









Marathon's acclaimed network play has been upgraded for *Durandal*. As well as the usual carnage *Marathon 2* introduces elements such as 'kill the man with the ball' (left), where the player with the skull is prime target







Although *Durandal* features a wide variety of aliens, it will take some time to discover them all. Unfortunately, the initial aliens look wimpish

yet never lose sight of the enemy. In network play the necessity of these controls only becomes more apparent. Newcomers to the system find themselves struggling to navigate the simplest of arenas, while *Marathon* experts can destroy the other players within seconds of materialising in the game zone. This skill can be carried over to the human vs aliens game, enabling the player to weave through the onslaught while destroying attackers with short bursts of gunfire. This truly is a superior control system to any found in other games of this genre.

Although the hi-res, 16bit colour, fully 3D environment is a joy to explore, surpassing the texture-mapping of *Doom* or any of its clones by implementing realistic perspective correction, *Marathon 2* still fails to impress in alien design. The variety of baddies is impressive, but there is nothing to match the outrageous monstrosity of *Doom*'s CyberDemon or MegaDemon. *Marathon*'s aliens look, frankly, weedy.

However, *Marathon 2* quenches a gameplaying thirst which Mac owners have been suffering for several months. Since the release of the original, in fact. The argument over which is best, *Marathon* or *Doom*, seems as futile as the *Windows 95* versus *MacOS* quarrel, but one thing is clear – the Macintosh can no longer be considered a machine alien to games players.

Edge rating: **Eight** out of **ten**







Accessing computer terminals (top and inset) provides vital, often illustrated, clues to help in the quest. Using the map (above) is essential during complicated levels

Deathkeep









***Deathkeep* tries to take the AD&D gameplaying philosophy and gel it with *Doom*-like graphics and action. Sadly, the result is a shambolic mishmash of fighting and adventuring**

Format:	3DO
Publisher:	SSI
Developer:	Lion
Price:	£45
Release:	Out now

Official Advanced Dungeons & Dragons games are always fairly conservative. Weighed down by the highly prominent mechanics of the role-playing system – armour classes, hit points, and so on – AD&D has never been faithfully translated to a videogame.

Deathkeep deserts the pen and paper practice and introduces *Doom*-style play instead. The simple scenario – nothing more than a glorified dungeon hack – is probably the same as most people's first (and last?) experience of AD&D. New monsters are served up around every corner, there's new equipment to collect, new spells to learn. It all fits the *Doom*-clone template very well but, like practically every other *Doom*-clone, is a disappointing underachiever.

The 3D engine is none too impressive with a narrow angled view and irritating inertia. The dungeons are constructed out of basic slabs with textures slapped on them and objects are two-dimensional, giving *Deathkeep* the look of a two-year old PC game. The monsters are no better and, lacking decent animation and adequate AI, they amble around until you come into view, then charge straight at you.

Many 'classic' AD&D elements remain in *Deathkeep* but they don't help matters. There's a choice of three characters – a dwarven fighter, an elf mage and a half-elf fighter/mage – each with different abilities, many restrictions and tedious experience levels. There's a huge, fiddly inventory screen to keep track of all the items picked up, and the equally fiddly magic system lets the elves learn up to 21 spells as they gain experience.





All these little details, though, make an already clumsy 3D romp too involved for quick hack 'n' slash play. If *Deathkeep* is trying to be a hybrid action RPG, all it has is complexity without depth.

Edge rating: **Five** out of **ten**





***Deathkeep* features a pre-rendered intro with the usual level of 3DO pixellation. Here the half elf fighter/mage (*Deathkeep*'s words) learns of the role he is to play in the adventure**

Foes of Ali





Once an adequate view has been found (left), further irritations emerge through the unintuitive control system. To fully land a punch (right), the player has to press the appropriate button for the whole move

Format:	3DO
Publisher:	Electronic Arts
Developer:	In-house
Price:	£44.99
Release:	Out now

It all seems very promising. Boxing, a much-neglected sport, finally gets the EA treatment. After all, they are the most consistent producer of quality sports sims and, conveniently for this title, the most consistent developer of 3DO software. No matter that they suffer badly from sequelitis, especially in the case of the ever-flawed *FIFA*, a brand new sports sim from Electronic Arts is always something to look forward to.

An uncharacteristically weedy EA Sports front-end animation soon gives way to a rather limited menu adorned with digitised photos of Ali in his prime. The choice of just three modes of play – exhibition, tournament and career – doesn't offer very much but then EA's sims have traditionally made up for such shortcomings by having phenomenally playable game engines. No such luck for *Foes of Ali*, however, as it suffers from an inspired, muddled control system and confusing, unattractive graphics.

Eschewing the simplistic *Punch Out*-style 2D approach, *Foes of Ali* follows the other route taken by videogame boxers – a full 3D simulation. Ironically, the first game to try this was the 1990 release, *4D Sports Boxing*, by Distinctive Software who later became EA Canada. The benefits of 3D sims are obvious – the fighters are given complete freedom of movement around the ring making for a much more realistic game than the 2D stand 'n' slug titles. However, no 3D boxing game has ever managed to create a control system that combines ease of movement with a full repertoire of punches, guards and dodges. Least of all *Foes of Ali*.

Heavyweights aren't noted for their mobility but the boxers in *Foes of Ali* trudge around the ring like sloths. They're slightly better going forwards and backwards than they are at sidestepping but it still takes an age to cross the canvas, giving the game a real plodding feel. The three basic buttons control left-handed punches, right-handed punches and upper body movement (ducks and dives, bobs and weaves). Move the pad when you throw a punch and you'll get a more advanced one – an uppercut, a hook or a body blow.





Landing a punch (left) is a difficult and frustrating experience. The view offered from the judges ring-side seating (right) is totally impractical, hindering the little gameplay that exists







***Foes of Ali*'s most impressive graphical element is the double vision suffered by boxers on the brink of kissing the deck (middle), coupled with an inhibiting blood-red hue (right)**

In theory this system seems to have everything covered but in practice it's very hard to time the punches properly and get them to connect. For one thing, the button has to be held down for the length of the whole punch – confusing for beat 'em up converts. Even a simple jab needs to be thrown from the right position and distance. The other fighter, of course, also has to have his guard down at the same time. All these variables make it tough to make contact with a single punch let alone string together a combo – vital if you want to put the other man on the floor.

On their own, the movement and punch controls are merely disappointing but together they're just plain annoying. Moving the pad to throw a non-jab punch also moves the fighter around the ring so after a couple of punches he's out of position and has to shuffle back again before getting another punch on target. Fighting in *Foes of Ali* is more like playing an antiquated, unresponsive flight sim than the fast, playable yet complex action of, say, *VF2*.

Graphically, *Foes of Ali* is a mess. The fighters have far too few polygons to be convincing and the faces of the real-life fighters are seemingly plonked on their heads. The crowd are a few big slabs of polygon with a fuzzy texture on it and the muddy palette doesn't help the overall look of things. Most of the camera angles are too distant so you can never tell if you're at the right range for a punch, but a couple of the 'Trackcam' views are good as are the 'Over-the-shoulder' views. The most spectacular camera angle is the boxer's-eye-view. Seriously damage your opponent's face and it'll be covered in cuts and bruises. Take a punishing yourself and blood will run into your boxer's eyes, his vision blurring and his eyes sometimes even closing up from bruising. It's a great touch – the one genuine innovation.

Bung this motley collection of elements together – slow fighters, a finicky punch and block system, clumsy graphics – and you have one shabby game. Even on novice level, the computer boxers are far too adept for all but the most gifted human players. Two player fights are typically hit 'n' hope affairs with both boxers flapping away aimlessly at each other. The career option just lets you fight through Ali's historical fights and records the scores – the fighter doesn't develop in any way.

Compared to even the poorest 3D 32bit beat 'em up, *Foes of Ali* lacks speed, fluidity, longevity – any factor associated with playability, really. Even against the massively flawed *Boxer's Road* on the PlayStation, *Foes of Ali* comes out second best. This game, and boxing games in general, need to go back to the drawing board to claim a share of the huge beat 'em up market. E

Edge rating: **Four** out of **ten**













Although *Foes of Ali* boasts an impressive array of views they are so ridiculously unplayable that it feels as if EA have only included them to have 'features' to display on the packaging

Street Fighter Alpha









Street Fighter Alpha is an impressively faithful conversion of the arcade original. The characters retain their sharp cartoon look and even the detailed backgrounds are accurately captured

Format:	PlayStation
Publisher:	Capcom
Developer:	In-house
Price:	¥5,800 (£40)
Release:	Out now (Jap)

In the 2D world of sprites and parallax scrolling, *Street Fighter II* is the pinnacle of its genre. Perfectly-timed gameplay, outrageous graphics and incredible longevity ensure the title remains the benchmark 2D beat 'em up. It was inevitable, therefore, that Capcom would soon release versions to appease owners of next generation consoles. Following the superb 3DO incarnation of *SSF II Turbo*, the Japanese codehouse has chosen to preserve its ever popular 2D engine for its latest installment, *Street Fighter Alpha* (aka *Zero* in Japan).

At first glance, the cartoon-style graphics immediately distinguish *SFA* from its predecessors. Bold, garish colours seem to have been daubed on to characters, giving them the anime look shared by Capcom stablemates, *Dark Stalkers* and *X-Men*. The result is beautifully animated cartoon style graphics, which, combined with new characters and improved special moves, make *SFA* a nirvana for *Street Fighter* fans.

Traditional moves aside, *SFA* takes the combo-based beat 'em up to its logical conclusion. New features include a triple 'super special' moves counter, auto blocking for beginners, mid-air blocking (a feature that *SF II* fans have been begging for), and the ability to break down an opponent's offensive, first seen in *Killer Instinct*.

These new features accompany a fresh range of characters. Charlie is a soldier similar to Guile, with a comparable barrage of moves, Rose is a gypsy who's able to deflect opponents projectiles and, making guest appearances from the aging Capcom scroller *Final Fight*, there's Guy and Sodom. Furthermore, *SFA*'s bosses, M. Bison, Akuma and newcomer Dan are all accessible via some manual joypad dexterity. There is also an option for two players to simultaneously



Ken's two-phase kick is a new addition to his basic repertoire

'Supers'







The tri-section energy gauges allow some amazing specials and super specials, each accompanied with dazzling graphical effects

take on M. Bison as Ryu and Ken – a feature faithful to the Manga animated movie.

While the characters in *SFA* are endowed with many special moves, when compared with 3D heavyweights such as *Virtua Fighter 2* and *Tekken*, they pale into insignificance. In addition, *SFA*'s moves are not as flamboyant and exaggerated as those in Saturn *X-Men*.

However the moves that are present are true to the *SF II* tradition with each of the original characters boasting new abilities, such as Ken with his forward role and Chun-Li with her new split kick. One new feature not seen in any other *SF* game to date is the ability to taunt your opponent, a feature pioneered by Neo Geo fighting games.

Where *SFA* really excels though is in the execution of special moves. These are now performed in conjunction with 'super special' moves, and can lead to combination hits of more than nine – a vast improvement over the three-move combos of *SF II*.

Finishes







The super special moves, when used to finish off an opponent, fill the screen with flashing light

Consequently, the learning curve is steep and even the most experienced player will take time mastering the linking of traditional three-move combos with three individually executed, 'super special' moves. The latter are spectacular to watch, especially when used to finish off an opponent.

Graphically, as you'd expect, *SFA* is an exact clone of its arcade counter part. Especially impressive is the fact that all the backgrounds, from the vast crowd of money throwing spectators in Charlie's stage, to the trains and smoke synonymous with the menacing Sodom, are identical to those in the arcade original. Although it lacks the graphical extravagance of the best 3D beat 'em ups, *SFA*'s unique look almost qualifies it as a graphical banquet.

While sound is faithful to the arcade original, the CD access time required to load in graphics is noticeably poor. This annoyance is particularly evident before each bout, interrupting gameplay significantly. Given the speed at which the graphically lavish *X-Men* is shunted into the Saturn's RAM, it's an unforgivable flaw.

Play modes in *SFA* are varied, but not perfect. There are three present – Arcade, Versus and Training, but there's no tournament mode; a shame, as this would have boosted the game's competitiveness. Two good features, however, are the ability to save high scores on to memory card, and the grandmasters' scoreboard, for those proficient enough to win every bout on one continue.

Although *SFA* excels in its own decaying genre, essentially it's just an improvement on a tried and tested formula. Games like *VF2* and the imminent sequel to *Tekken* dominate the beat 'em up world with their 3D fluidity, realism and graphical finesse. With such games becoming widespread, the 2D beat 'em up is facing extinction. Perhaps the release of *SFA* and *X-Men* (**E**29) will provide the stay of execution this tired genre needs.

Edge rating: **Eight** out of **ten**



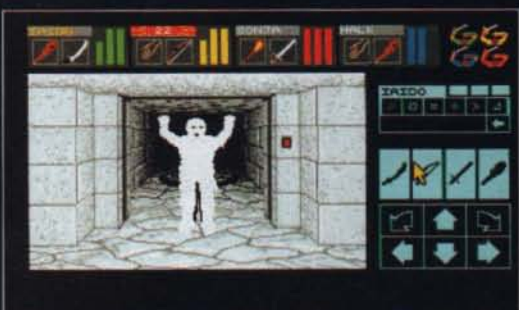




Projectile moves still make up an important part of each character's arsenal. Mastering these is vital

It is impossible to imagine gaming without *Doom*. But before id's rise to fame, one title had already introduced a world of switches and monsters...

Dungeon Master





One of *DM*'s most lauded features was the character screen where vital statistics, objects collected, weaponry and food could be scrutinised

Format:	ST and Amiga
Publisher:	Mirrorsoft
Developer:	FTL
Price:	£25
Players:	One
Released:	1988



***Dungeon Master*'s combat system was basic – click on the weapon and perform the relevant move, slowly depleting the enemy's hit points**

A gaming revolution occurred in 1988. Until then, games had been flat, sprite-heavy and usually scrolling. With the release of *Dungeon Master* all that changed. Developed by FTL (also famous for their ST/Mac title, *Oids* – see Retroview, **E**24), *DM* is still regarded by many as the closest any videogame has got to recreating the involved Dungeons & Dragons style of gaming.

Taking charge of four characters, resurrected from the Hall of Champions (a chamber where warriors, magicians etc, had been entombed inside pictures), the player had to lead their party through a maze of passageways and halls in search of the evil Lord Chaos – a master of darkness possessing immense magical powers.

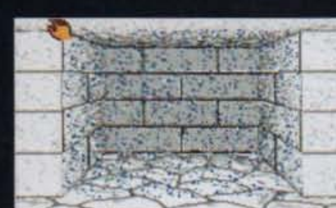


On the way the party had to overcome droves of monsters, from the relatively pathetic screamer (a green mushroom) to the awesome dragon (one fireball caused immediate dead), and incredibly fiendish puzzles, from simple levers to complicated systems of pressure pads and switches. Initially the party were relatively inept, with limited fighting skills and few magical abilities, but as the adventure progressed and more beasts were slain the group's experience increased, adding complex fighting moves and spells to their talents.



However, *DM*'s most acclaimed feature, which at the time was mimicked nearly as much as id's *Doom* engine is today, was the first-person 3D in which the game was displayed.

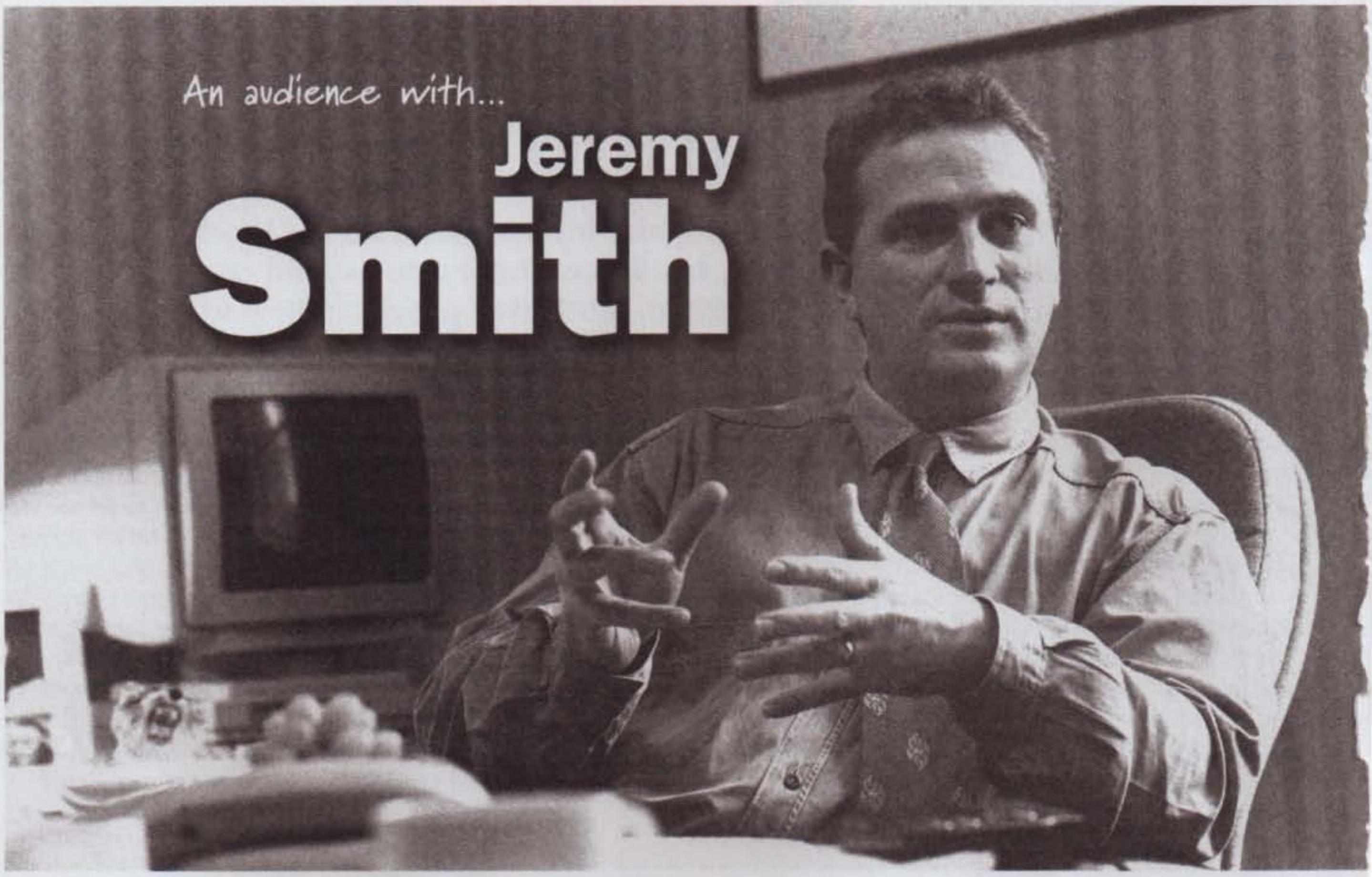
Movements were stepped and blocky, basic now, but for the day revolutionary. The entire dungeon was created from a bitmapped grid, glued together so as to create an impression of 3D. The dungeon's monsters were then clipped and placed in position, the relevant image being used for distance, direction, etc. There was no zooming, texture-mapping, or bitmap skewing. *Dungeon Master* was as graphically intense as eighties games got.



Away from the hack and slay, *Dungeon Master* also introduced brainteasing puzzles, using pressure pads, switches and forcefields

The sequels, *Chaos Strikes Back* and *DMII* (on the PC) failed to capture the awe that *Dungeon Master* first created, being little more than a set of harder, more ingenious levels than anything substantially new. And some critics will say that Tony Crowther's *Captive* made more of the genre than *DM*.

With the release of *Doom*, FTL's game engine was essentially put to rest, but game historians should not forget it was *Dungeon Master* which first introduced the world to switches, monster mayhem and 3D play. **E**



From smart-arse shower curtain salesman to Managing Director of one of Britain's leading software development companies, Jeremy Smith is now a key player in the games industry. **Edge** spoke to the man fronting Derby's Core Design

After being fired from his job selling shower curtains ('I was a smart-arse, a 21-year old know-it-all', he says), Core's Managing Director Jeremy Smith stumbled into the games industry. After being made redundant he landed a position selling Activision 2600 VCS cartridges. A series of jobs followed in sales and distribution, including a stint at Gremlin Graphics in Sheffield.

After a year or so at the company, an opportunity came up with a group of Gremlin programmers in Derby. They had been asked to relocate to Sheffield but didn't want to go. Thus Core Design was born in 1988, its first title being the Firebird-published *Rick Dangerous*. By 1990, Core were confident enough to publish their own games and the first, *Corporation*, was a huge success. Later hits included *Chuck Rock* and *Thunderhawk* – both games benefiting from, and strengthening, Core's close relationship with Sega.

In late 1994, Core was bought by the CentreGold group – parent company of US Gold and distributor Centresoft. Core's first entry into the 32bit console market is its 3D helicopter shoot 'em up, *Firestorm: Thunderhawk 2* (**E**29). **Edge** spoke with Jeremy Smith about 32bit gaming and the war between Sega, Sony and Nintendo.

Edge Your latest game, *Thunderhawk 2*, has come right after *Air Combat*, *Wing Arms* and *War Hawk*. How does it compare to them?

JS It's flying out of the door – I think we haven't had a review under 90%. We certainly shipped in excess of 100,000 units before the Christmas break. I never really worried about *Thunderhawk* up against any competition, mainly because the success of the first one has carried through. On the Mega CD, for example, we probably got about an 80% sell from the Mega CD userbase in Europe on *Thunderhawk*.

Edge Wasn't it the only big seller on the Mega CD, as the machine died a death?

JS It did dreadfully. All their other titles never came anywhere near it. *Sonic* did well but I think it was only *Sonic* and *Thunderhawk* that did the business, actually.

Edge What do you make of the 32X and Sega's attempts to keep its userbase?

JS The 32X was misunderstood. The 32X, in reality, is an extremely powerful piece of hardware, they just cocked it up. I mean, it's only one processor short of a Saturn, it's immensely powerful, they just didn't get that software support and the software community didn't buy into it. That was the

problem. We've got three finished 32X games which we're not even going to release, there's just no market for it.

Edge Are you planning to develop for Nintendo's Ultra 64?

JS We'd love to but we currently don't have a relationship with Nintendo. However, our parent company, US Gold, has contacts with Nintendo and I've got a trip scheduled to Japan in the next few weeks so if things go well we could start trying to build a relationship then.

Edge How do you see Ultra 64 fitting into the market?

JS It'll be a toy.

Edge Do you think it'll sell?

JS It'll be huge. Massive. But I think it'll be perceived as a toy rather than a super console because they're going to go down far more traditional toy channels where





The 32X, in reality, is an extremely powerful piece of hardware, they just cocked it up. I mean, it's only one processor short of a Saturn

Nintendo has always been successful. It's still a cartridge-based machine, too. We don't know enough technically about it, only what we've read in **Edge** and other magazines but we've certainly got no technical specifications about it.

Edge Do you think that the CD machines, by aiming for an older market, are going to have a longer shelf life than Ultra 64?

JS The two shelf lives will certainly be different. I suspect the machines will sit alongside each other but aimed at two different people. You're going to get the die-hard gamers buying Ultra 64 in order to play *Mario* but you're also going to get a new breed of consumer going for it because U64 games are very different to Saturn and PlayStation. And, of course, Nintendo will currently only let you publish the game on U64 and no other format.

As for longevity, there always has to be some form of inexpensive games console for kids, whether that's a MegaDrive or a SNES, as it currently is, or perhaps Ultra 64 in the future. Otherwise we'll return to the American situation ten years ago, where the PC market went 'whoosh', the Commodore 64 died, and everyone forgot about the kids, leaving a huge band of 8-12 year old kids wanting to spend their parents' cash?

Edge And Nintendo just swept in there?

JS Wham! They filled that hole and I'm convinced it's going to need filling again. If you look at what's happening, we're all aiming our games at maybe the 14-plus bracket. What about the kids? Give it another two or three years and someone will plug that hole, they have to. History has a tendency to repeat itself and we're heading for that mid-eighties vacuum.

Edge Speaking of history repeating itself, there's been a lot of buy outs recently – Core by CentreGold, Probe by Acclaim and Bullfrog by EA – it was like a repeat of the rationalisation of the mid-eighties when some companies were bought up and a lot went to the wall.

JS We were still in the cartridge business, the company had expanded – we were up to 50 people. To try to sell to the public was getting very difficult, we needed a sort of strategic partner. I had a couple of deals on the table at the time but because I knew Geoff [Brown] from days gone by I went with CentreGold.

Edge What is your relationship with them? Since they lost names like LucasArts, you must be their sole big developer now?

JS Yeah, it's interesting. We still publish under Core Design but everything is a group so it all goes into a big pot. I have a reasonable amount of activity on the US Gold side but I mainly spend my time at Silicon Dreams down in Banbury working on the Olympics titles. They'll probably be the first 'A' category games under the US Gold brand to be developed in-house. So, US Gold is building up its development resources and, at the moment, Core is its main source for development in the group.

Edge So how does the set-up work? Do US Gold have creative control? Do they ask for a number of titles a year?

JS No, because my involvement in the group is quite tight – I'm on the main board now and am a large shareholder, Geoff and I work quite closely trying to steer the group through the rocky period the industry is in right now – Core hasn't really changed since the day we were bought. We're still working on the products we want to work on. We have an executive committee now where we meet and have updates on products all the time because, in the past, one of US Gold's biggest problems was weak development and therefore weak products. With bringing me on board, my single biggest strength is



Continued next page

interview

Continued

having a nose for product. We had to write off a lot of product a year ago that was in development because it was crap. But it took someone else to come in and say, 'This is not going to happen.' You just have to bite the bullet.

What I don't think US Gold realised was how long it would take to get internal development running smoothly. It took Core something like five years. You can't just set up overnight and expect everything to run smoothly.

Edge Do you think that's why people have been buying name teams?

JS No question. You can't just go out and say 'There's a couple of million pounds. Let's go and buy a ton of SGs, a ton of development kits and put a big ad in **Edge** and get a load of people in.' It doesn't happen. Developers now, who have internal programmers, fight tooth and nail to keep them. We lose very few staff because we look after them very well. You have to. As far as I'm concerned artists and programmers are king as without them you've got nothing.

Edge Do the programmers and artists originate the ideas for the games at Core's headquarters?

JS Oh, all of them, yeah. All I try to do is put my knowledge of what's happening in the market. I just try and fill in the little pieces of the jigsaw before we start. I guess I have the ultimate say but I certainly wouldn't ever like to take the ultimate decision – if I'd have had my way, for instance, we'd have never done *Chuck Rock*. I personally thought the character sucked. So what do I know?

Edge Has he finally been put out to grass?

JS He has, I guess. It would be great to bring him back but the market doesn't want a *Chuck Rock* or a *Zool* or one of the other publishers' characters that we developed five years ago. It's not ready for it. Maybe for Ultra 64, but it depends on who's going to buy it.

Edge That was a classic case of bandwagon jumping, wasn't it? Everybody had their own character.

JS No question. We did have *Chuck Rock* before *Sonic*, though. We looked at *Mario*. He was the guy, wasn't he? That was the start of everything.

Edge Isn't everyone jumping on bandwagons now, though? Driving games? Fighting games?

JS Absolutely. I don't think there's any original product being written now. I think everyone is tunnelled because they're terrified of stepping over to the other side. And Core, to that extent, is no different. We've got *Tomb Raider*, which is totally



original in what it's doing with the character in full, realtime 3D, but it's still in a very safe genre. It's not a *Lemmings*, let's say. If *Lemmings* had come on my desk I'd have said 'You must be joking. I don't want that, it's no good to me.'

Edge Core have jumped around the genres a bit. You've become a jack of all trades. Perhaps a master of none?

JS There may be some truth in that. We've never tried to write a *Populous*, or a classic game of that ilk. We have gone out to write games which we think are playable, though. But, yeah, we certainly have jumped around and it's not like we've tried to find the right bed to lie in. It's a case of trying to cover all bases. Maybe the strategy is wrong, maybe we should have stuck at, say, the Sierra-style adventures but we've had a go at all of them. The only one we ever crashed and burned in was the space shoot 'em up we did – *Frenetic*. We were so envious of the Bitmaps, who'd just done *Xenon*, and we always believe we can do a game better than anyone else but we crashed and burned big style on that one.

Edge You said earlier that you think the industry's going through a rocky period now. Why?

JS Development costs are probably running at half a million dollars a title. The superleague companies, of whom I class Electronic Arts, Acclaim, and probably Virgin, are moving further and further away from the smaller codehouses. Take EA, for example – they have to be the best all-round company in the market right now. They're so far in front of everyone else, so how do you catch them up? Looking at CentreGold as a group, we're tiny. We're a minnow in comparison to those guys so how do we go forward as a group? We've got to find new backers, a new partner to take us into the premier league. I think it's rocky because the costs of development are so high and the stakes we're playing for are massive.

Edge What are the important attributes needed to sell a good game, then?

JS It's that classic cliché, playability. These days your game has to look great but it still has to play well. The current problem is that games look great but they play like complete dogs. I think *Toshinden* plays terribly but it looks awesome. If you ask the gamer, they'd rather play *Virtua Fighter*, purely because it is more playable.



Edge What about *Tekken*?

JS I played it and I could appreciate it but it lacked – I guess – the rawness *Virtua Fighter* had. And that's what Nintendo has, Nintendo games are always raw, that's what makes them successful.

Edge So you still think Nintendo and Sega are up there at the top, even with the PlayStation making a name for itself?

JS Yeah, no question. They spend a lot of time at it. I've been fortunate enough to walk around Sega's R&D section and it's stunning. There are hundreds of people working on concepts, working on the dynamics of a car, to make sure it's absolutely right. They can just focus so

much on a game, and that's a massive advantage over everyone else.

Edge But it's money again. All that man power is expensive.

JS It's all down to the cash in hand, which is the biggest problem.

Edge Do you see a lot of differences between American, Japanese and British games design?

JS Yeah, huge amounts. I don't think the Americans can write a great playable game but they certainly put the best gloss on a game, the best polish ever. The Japanese, they write probably the most original, playable games but don't give two hoots about the graphics. So long as it plays well and it's fast, they don't really care.

The British and the European developers are catching up. But we all took a very similar decision by saying 'We can't



catch the Americans'. None of the UK programmers wanted to work in C rather than assembler. The PCs were slow, 386 was probably state-of-the-art then, so none of our guys wanted to touch it.

Edge And, of course, the Amiga and the ST were still big.

JS Absolutely, we didn't need the PC. So we were going 'Oh, we don't need it' when we should have been trying to crack the American market. But no, we stuck our bloody heads in the sand with Amiga and the ST.

Edge Are you still committed to Amiga?

JS No, we bailed out of the Amiga a year ago. We did some CD32 stuff and had some success with that but we finished up our projects and dived out.

Edge With the demise of the Amiga market, are you sad to see cheap home computing disappearing?

JS Yeah, totally. If you consider that the average punter only has the option of the PC now, where the minimum spec for the forthcoming batch of games has to be a P60, that's the best part of a thousand quid. You've Saturn and PlayStation which are expensive toys – games machines – they're not computers. In a couple of years, there'll be no computer for the kids to buy. The Amiga will be dead and gone and maybe some PCs will be down at four hundred pounds? Probably not...

Edge Not the spec to play the latest games, anyway...

JS No, absolutely. I think Nintendo have been fairly smart by saying Ultra 64 isn't a super console but a games machine, a toy, and they've always been in the toy business. Sega and Sony have seen themselves as pushing back the boundaries of technology, as did 3DO, where Nintendo have always maintained that they're in the toy business.

Edge Do you see Sony, Sega and Nintendo as the only players left?

JS Yeah. Well, apart from maybe M2. They have Matsushita involved in it and you can't write those guys off.

Edge But 3DO?

JS 3DO's a dead duck. M2 – fabulous spec machine but it's the cost. It's all cost-driven. But I suspect that Sega will join the M2 camp, or more realistically the Matsushita camp, and probably get involved in the M2 technology as well. If that happens then The 3DO Company will have some serious software, which is the only thing M2 will have a shortage of initially – serious brand software. That's why I'm still totally convinced that Sega will win the day with hardware. The software's better than PlayStation. Just take a look at *Virtua Fighter 2*...

Edge Maybe, but Sega seemed to have quite a few hiccups early on getting the software right.

JS Yeah, they unfortunately rushed it. It's second wave software that counts. You take the original *Virtua Fighter* that came out on Saturn and everyone said 'Wow, this is brilliant'. Then they did the *Remix*, which was like 'Shit, this is superb'. Now you look at *Virtua Fighter 2*, it's just stunning. You look at Saturn *Virtua Cop*, I can't see the difference between that and the coin-op version.

We're finding the same here. With *Thunderhawk 2*, the technology used there is only really our first attempt at exploiting the console's power. When the team works on the next game they will have broken Saturn's back, so they'll know what it can and can't do. And all the guys here maintain Saturn's more powerful than PlayStation.

Edge Do you still have a close relationship with Sega?

JS Yeah, we're still fairly Sega. It gets very difficult because of the current strength of PlayStation in Europe and you can't turn your back on that. We are writing specific titles for PlayStation that do use the hardware. You can't afford to be too loyal, of course, since at the end of the day we're a commercial business and our business is selling software.

On the next game the team will know what Saturn can and can't do. All the guys here maintain Saturn's more powerful than PlayStation

Edge Is the British software industry going to change a lot over the next few years?

JS I remember Geoff Heath, who used to be my boss at Activision but now runs Mindscape, saying to me, 'It's going to be just like the book business, like the record business. There are going to be a handful of players.' He said this to me years ago and we're about there now. There are probably going to be three or four key players but I'm convinced that in two or three years time the small publisher will come back into his own. I suspect that it'll all come full circle and, like the record business, you'll have these small independent labels, all making a living.

Edge So you think the production costs will come down, that the profit margins will be there?

JS The biggest problem is that things are dominated currently by Sony and Sega and you need a huge amount of cash just to even publish a game. We need the small guys, without the small guys, the industry will choke itself.

questiontime



Send your **questions** to Q&A, **Edge**, 30 Monmouth Street, Bath, Avon BA1 2BW

Q **1.** Is there any truth to the rumour (printed in your sister mag, UFG) that Namco games are to appear on Ultra 64?
2. How much, realistically, will U64's games and hardware cost?
3. Can you clarify rumours about the Sega-M2 partnership?
4. How much would it cost to buy the *Sega Rally* arcade unit?

Mark Fothergill, Colne, Lancs

A **1.** There are rumours that Namco have committed themselves to developing an Ultra 64 conversion of F1 coin-op, *Ace Driver*. That probably won't be for at least a year, however, since Nintendo are keen to promote home-bred software from the 'Dream Team' before allowing other developers to support the console.
2. Nintendo have been adamant over U64's price since details first emerged – $250 (which will probably translate to £250). The price of software has been set in Japan at ¥9,800 (£60) – the same price as most Super Famicom carts. Expect software to arrive on these shores for around £60-70. Even Nintendo knows that very few people will pay more than this for one game.
3. The rumour surrounding Matsushita licensing M2 technology to Sega for a 64bit Saturn 2 (to be released in early 1998, at a similar time to Sony's planned release of PlayStation 2, incidentally) has been circulating for some time, but as yet no official news has emanated from Japan (see news for more details). Development companies always exercise continuing R&D behind closed doors, so whether any hard evidence emerges remains to be seen.
4. The minimum arcade set-up, the stand-up unit with steering wheel, costs £4-5,000. If you feel indulgent, a deluxe sit-down unit sells for over £10,000.



Are Namco going to release titles like *Ace Driver* for U64? See letter from Mark Fothergill

Q After buying a Saturn, PlayStation and a new 100Hz Sony colour TV on which to play the games, I was told I couldn't use the gun when playing *Virtua Cop* since it only works on 50-60Hz televisions. Are there so few 100Hz TVs that Sony, Sega, etc don't care to make guns for them? How ironic it would be if I were unable to play a PlayStation game using a Sony gun on my Sony TV.

Peraage Byrud, Norway

A For *Virtua Cop* to work with the light gun, the television and console must be in sync, ie run at the same frequency. The light gun operates by detecting the television's electron beam as it forms the picture on the screen. Since the TV is synchronised to the game, the program can calculate exactly where the gun is pointing from the time delay between the start of each frame loop and the recognition of the electron beam. However, if your television is running at 100Hz, the television performs two passes to each game loop, causing confusion and a defective targeting system.

Q I own an imported Saturn and would like to ask you a few questions.
1. I can use my Saturn on my TV using the video and audio inputs, but the picture is black and white. How do I get colour?
2. Would the Japanese RF unit or UK unit help the situation?
3. Will official UK Saturn accessories work with the imported Saturn?
4. Is *Street Fighter Alpha/Zero* going to be released on the Saturn and is *SSFII Turbo* going to be released? If so, when?
5. Are any Neo Geo games going to be converted? If so, which ones and when?

Nicky Wan, Essex



Nicky Wan wants to know if Saturn accessories, like video CD, will work on his import

A **1.** Through composite AV the picture will be NTSC colour-coded and you'll need an NTSC-compatible TV or, a cheaper option, an RGB Scart lead.
2. No.
3. Joypads are no problem and you can quite happily use a Japanese pad on a UK machine, but the problems arise when you want to use a light gun or Video CD card.
4. By the time you read this, *Street Fighter Zero* will be out in Japan, with a UK release date (through Virgin) pencilled in for March. There are no plans to release its predecessor on either Saturn or PlayStation.
5. *King Of Fighters '95* and *Fatal Fury 3* are the first two games planned for Saturn translation.

Q As a Saturn owner I find no bias in your magazine towards any one system. Your hardware guide was brilliant but it did leave some questions unanswered which I hope you can answer for me.
1. How many polygons/sprites can Saturn display?
2. What does the SGL do that the previous system didn't?
3. What other games apart from *VF2* and *Virtua Cop* are going to use the SGL?
4. In 3D performance terms, how really does Saturn fare against PlayStation?
5. *VF2* on Saturn has a resolution of 704x480. What is the res of the arcade version?
6. How do Sega arcade boards compare to Namco's?

Fung Tang, Norwich

A **1.** For the final time, there is no fixed number of polygons or sprites that Saturn can manage. It depends heavily on size and the number of colours used. A game such as *Virtua Fighter 2* probably uses at least a thousand polygons for each fighter but none for the scenery, which manipulates bitmaps. Given the game runs at 60fps, the characters alone must be requiring over 100,000 polygons every second.
2. The Sega Graphics Library is a set of core assembly routines designed to get the most out of Saturn's hardware. Instead of programmers having to spend months writing their own custom 3D routines, Sega have streamlined the process making things easier for developers.
3. *Fighting Vipers* is known to be in development and *Virtua Cop 2* seems likely for conversion.

4. It lacks the raw polygon processing that PlayStation benefits from (although decent programming can achieve impressive results, as *Sega Rally* testifies) but its custom bitmap silicon can scale and distort sprites with little processor overhead.

5. AM2 haven't announced exactly what resolution the arcade version of *VF2* runs in although it's likely to be similar to that of the Saturn game or perhaps even less (the arcade version of *Daytona USA* runs in 496x384, incidentally)

6. Both companies use off-the-shelf chips and custom graphics processors such as the one designed by Martin Marietta for Sega's Model 2 board, but the high level of secrecy involved means it is often difficult to get hard information.

Q The finest football game ever programmed on any machine is undeniably *Sensible World of Soccer* on the Amiga. Is there any chance of seeing this legendary piece of software on PlayStation as a direct port with no extra fiddly buttons used to interfere with the gameplay.

Joe Hind, Somersham, Cambs

A Sensible Software are rumoured to be considering a PlayStation conversion of *Sensi*, but they are unsure how to tackle the process. Although the game does feature supreme gameplay, the PlayStation press may consider that insufficient when up against soccer sims that throw polygons about the screen, so the company are still deciding what to do. If nothing emerges, your best bet would probably be the forthcoming *Actua Soccer*, from Gremlin or Konami's *J-League Winning Eleven* (**E**25).



Will the superlative *Sensible World of Soccer* be converted to PlayStation, asks Joe Hind



How can Edge dismiss the PC so easily now the nVidia chip exists, says David Baumann

Q Are any of the new consoles any good at running PC strategy games? And is it likely that such games will be released on machines such as the PlayStation, Saturn and M2?

Lars Erik Johnsrod, Norway

A Some PC strategy games are notoriously demanding on processing power and RAM but the release of *X-COM: Enemy Unkown* (PlayStation) and *Sim City 2000* (Saturn) shows that it is possible and more should follow.

Q I would like to clear up a few of your answers to Andrew Bradfield's query over the current batch of PC 3D accelerator cards.

You state that you have seen the Creative Labs 3D Blaster, yet judging by its performance you believe it must have been running on a PCI Pentium PC. According to information I have gleaned, from sources other than **Edge** I might point out, the 3D blaster will initially only be released in VESA bus format aiming it squarely at 486 systems. As far as I can see, games coded for it would bring the 486 up to Pentium level but also running in 640x480, 16 million colours.

The Diamond Edge nVidia card, on the other hand, is only being released in PCI form to avoid direct competition with Creative, and is targeted specifically at *Windows '95* Pentium users.

Edge were the ones who originally brought the existence of nVidia to my attention and having recently built my own P100 system I am relatively interested in the prospect of owning one. However, I have heard very little about it apart from a few news items and that Sega is coding for it. Imagine my surprise when I contacted Diamond early in December to find that it is already available!

I know that **Edge** feels that even high-end Pentium PCs are vastly inferior to the likes of Saturn or PlayStation (not an opinion held by me I might add) but I'm sure nVidia constitutes some form of next generation gaming and therefore demands some review space within the magazine's pages. All I've gathered thus far is that there is a hi-res (1,024x768 – now that's hi-res) version of *Virtua Fighter Remix* bundled with the card, and *Panzer Dragoon* and *Daytona USA* are soon to be released, and there are a few powered-up PC titles (*Descent, NASCAR Racing*). What I really want to know is how do they run? Does *Virtua Fighter* run at a smooth 60fps? And being coded by Sega Of America can it ever live up to AM2's original release?

I know that currently nVidia may appeal to a limited audience and the PC is a big, bulky, inconvenient and expensive source of pure gaming, but I don't think you can underestimate the impact the PC is currently having on the gaming community. With Sega setting up their Sega PC division for both the PC and nVidia, Namco converting titles for another PC card, Atari developing games, PlayStation and Saturn developers using it as the development box and porting the console games back (*WipeOut, Destruction Derby*), the intervention of things like BT's Wireplay, and Sony purchasing an absolute shed-load of Intel Triton boards, Pentiums and manufacturing PCs, I think we have only just seen the beginning of the PC games revolution.

David Baumann, Dundstable, Beds

A **Edge** doesn't regard Pentium PCs as inferior to Saturn and PlayStation but the importance of custom graphics silicon cannot be underestimated. Without cards such as the nVidia and Creative's 3D Blaster the PC's graphic abilities do suffer markedly by comparison to new game consoles. *VF Remix* on the nVidia does indeed run at a higher resolution than the Saturn original and at the same speed (30fps). Whether the Saturn's custom bitmap silicon can be emulated on the nVidia is another matter so it makes little sense to predict if *VF2* (which relies on scaled bitmaps for the floors and backdrops) will be as well translated.



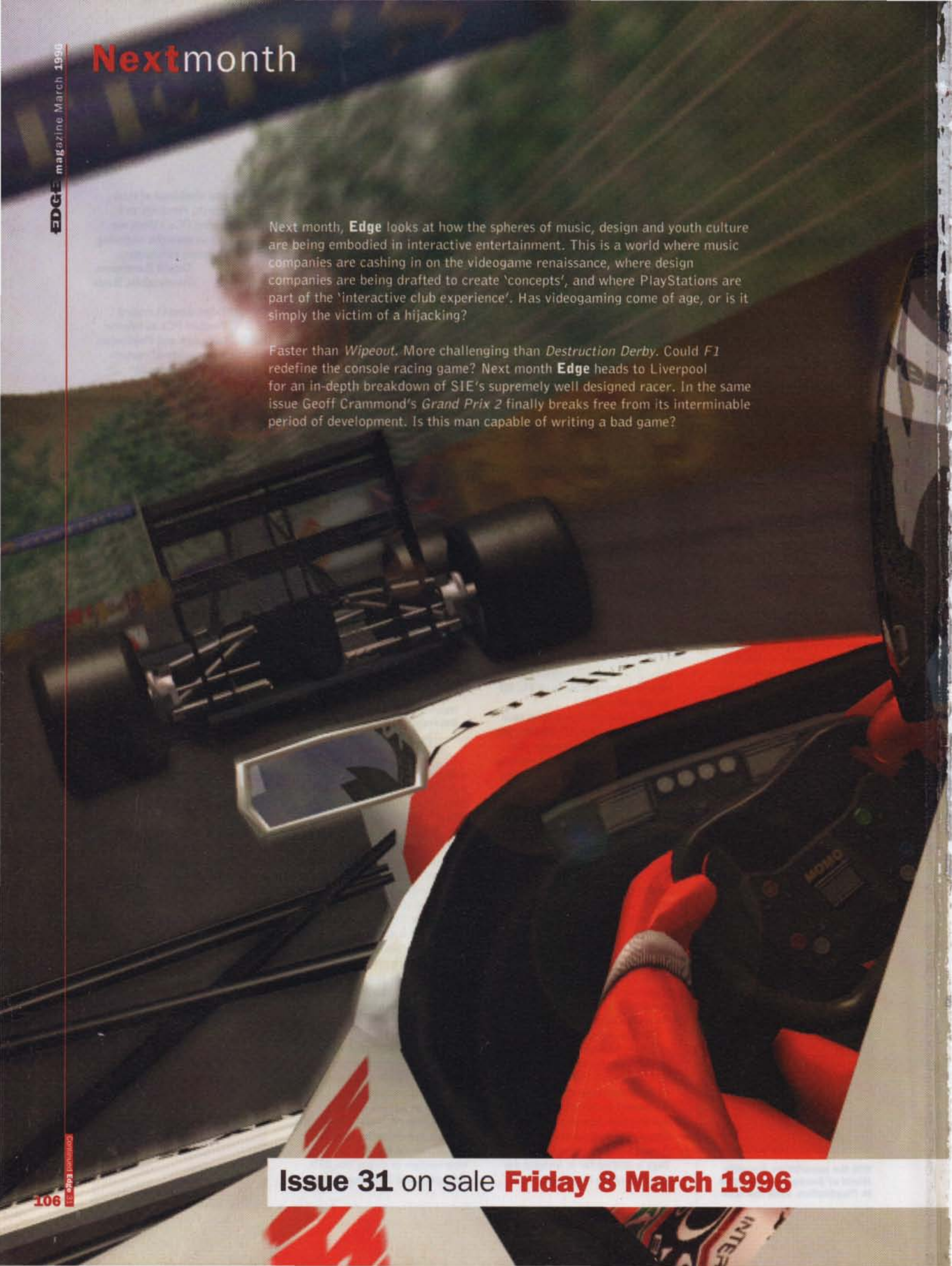
How does *Virtua Fighter Remix* on a PC with a 3D card rate against the Saturn original, queries David Baumann. And will PC *VF2* be any good?

Q and A

You can depend on Edge to cut through the technobabble and give you straight answers. You can write to us at Q&A, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW. Alternatively, fax us on 01225 338236, or e-mail us at edge@futurenet.co.uk.

Edge regrets that it can't answer questions personally, by phone, post or e-mail.

Nextmonth

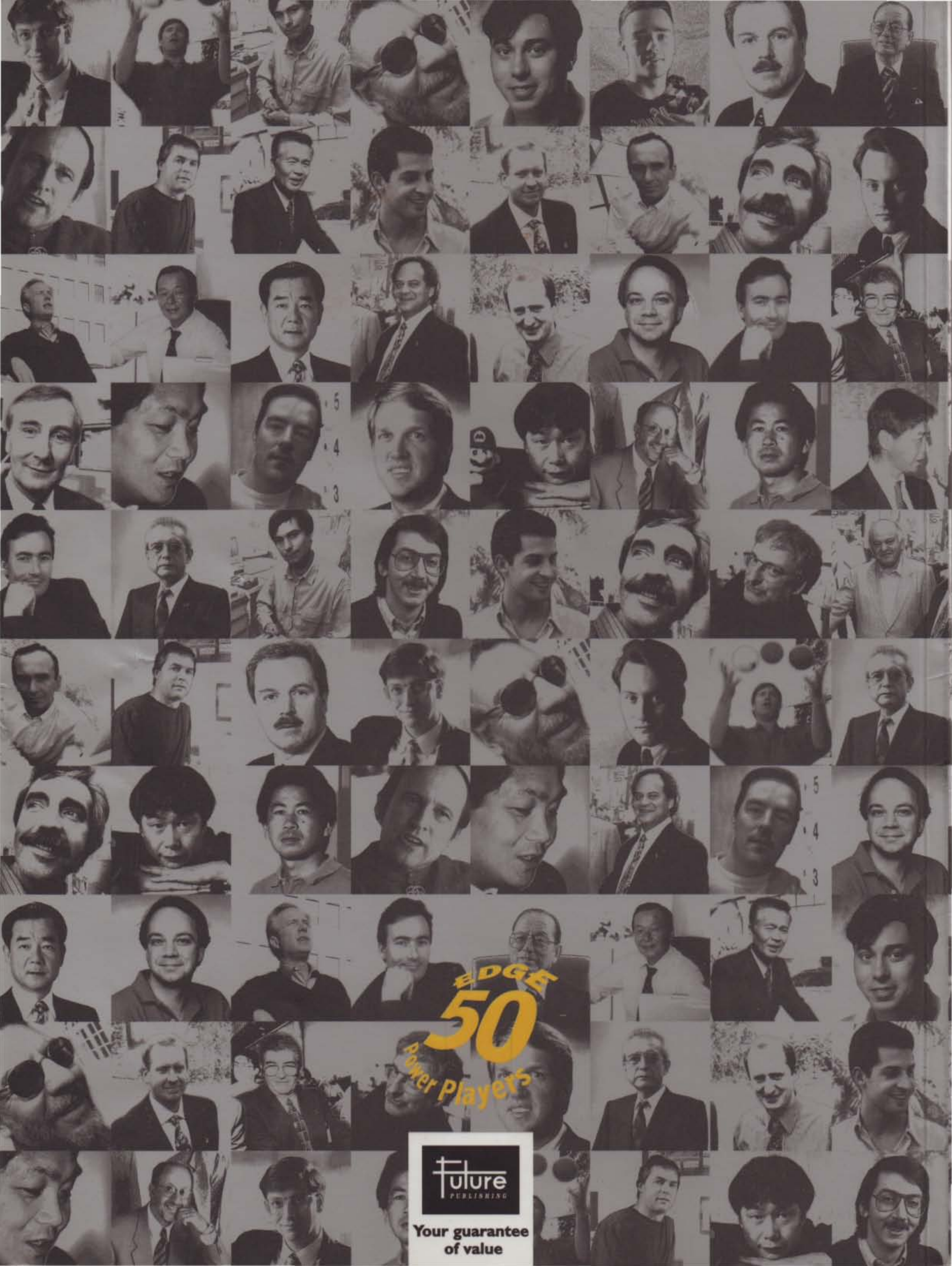


Next month, **Edge** looks at how the spheres of music, design and youth culture are being embodied in interactive entertainment. This is a world where music companies are cashing in on the videogame renaissance, where design companies are being drafted to create 'concepts', and where PlayStations are part of the 'interactive club experience'. Has videogaming come of age, or is it simply the victim of a hijacking?

Faster than *Wipeout*. More challenging than *Destruction Derby*. Could *F1* redefine the console racing game? Next month **Edge** heads to Liverpool for an in-depth breakdown of SIE's supremely well designed racer. In the same issue Geoff Crammond's *Grand Prix 2* finally breaks free from its interminable period of development. Is this man capable of writing a bad game?

Issue 31 on sale **Friday 8 March 1996**




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